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H. W. WILEY, CHIEF OF BUREAU.

INFLUENCE OF FOOD PRESERVATIVES AND ARTIFICIAL COLORS ON DIGESTION AND HEALTH.

I.—BORIC ACID AND BORAX.

BY H. W. WILEY, M. D.,

WITH THE COLLABORATION OF W. D. BIGELOW, CHIEF OF THE DIVISION OF FOODS, AND OTHERS.

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LETTER OF TRANSMITTAL.

U. S. Department of Agriculture,
Bureau of Chemistry,
Washington, D. C., June 23, 1904.

Sir: I beg leave to submit for your approval a detailed report on the experiments undertaken in this Bureau to ascertain the effects of boric acid and borax on digestion and health.

In connection with the various phases of the work credit is given to those who performed it, but special mention should be made of the cooperation of the Bureau of Statistics, where the analytical data were tabulated. This assistance has been invaluable and has expedited the publication of the report. Acknowledgment is also due to the Public Health and Marine-Hospital Service for the medical supervision given during the experiment.

I recommend the publication of this manuscript as Part I of Bulletin No. 84 of the Bureau of Chemistry.

Respectfully,

H. W. Wiley, *Chief.*

Hon. James Wilson,
Secretary of Agriculture.

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INFLUENCE OF FOOD PRESERVATIVES AND ARTIFICIAL COLORS ON DIGESTION AND HEALTH.

I. BORIC ACID AND BORAX.

INTRODUCTION.

OBJECT OF THE INVESTIGATION.

The object of the investigation described in the following pages is to determine the effect of certain preservatives upon digestion and health. The work was undertaken in accordance with the authority conferred by Congress in the act (32 Stat. L., 286) making appropriations for the Department of Agriculture for the fiscal year ended June 30, 1903. In that act the Secretary of Agriculture is authorized "to investigate the character of proposed food preservatives and coloring matters, to determine their relation to digestion and to health, and to establish principles which should guide their use."

The necessity for an investigation of this kind is found in the very general use of certain chemical compounds for preserving foods and of certain coloring matters for imparting to foods a tint resembling that of nature, which they may have lost, or of producing in food products certain colors which are attractive to the eye of the consumer.

The use of preservatives in food products is as old as civilization, and there is no occasion in these investigations for adding to the studies already made of the long-established preservative agents. Moreover, these preservatives are condimental in character and reveal themselves at once by taste or odor to the consumer. The more important of the common and long-established preservatives are salt, sugar, vinegar, and wood smoke. Alcohol has also been long used as a food preservative, but does not rank in antiquity and in generality of use with those just mentioned.

One of the chief characteristics of the modern chemical preservative is that it is often almost without taste or odor, and for this reason its presence in a food product, unless specifically proclaimed, would not be noticed by the consumer. But while this is true of most of the preservatives used in the preparation of foods (except the condimental substances mentioned), in the quantities employed, this

does not mean that in a concentrated form they have neither taste nor odor. Quite the contrary is true. Nearly all of them in a concentrated state reveal themselves either by taste or by odor. For instance, salicylic acid in a pure state has a distinct taste, and sulphurous acid in the form of gas or in a nearly saturated solution is distinguished by its odor and irritant effect upon the nostrils. Nevertheless, small quantities of salicylic acid can be placed in food products without the consumer being able to detect it, and the same is true of sulphurous acid.

Legislation has been enacted concerning the use of preservatives and coloring matters in foods in foreign countries and in the various States of the United States.[a] This legislation is of varying character, prohibiting in some countries what is allowed in others, establishing rules and regulations which are local in character, and, in general, producing a state of affairs which is annoying to the manufacturer of food products and the dealers therein, and which, by the diversity of laws and decisions relating thereto, does not secure to the consumer the full benefit which was intended. The desirability of some investigation, therefore, is apparent, in order to establish certain principles concerning the use or prohibition of these substances, which, by reason of their more general applicability, may influence local and general legislation in a manner tending to secure a greater uniformity and efficiency. It is also evident that if these investigations are conducted under some direction not particularly interested in the construction of any law nor associated in any commercial way with the interests of either manufacturer or consumer, they will have a greater weight.

The Secretary of Agriculture is manifestly the proper official to undertake and direct such an investigation. The interests of the Department over which he presides are associated alike with producers, manufacturers, and consumers of food products, and thus any bias which might exist in other quarters in favor of any particular interest would be eliminated. For this reason the investigations conducted under his direction, even if no more thorough, painstaking, or reliable than if carried on under other auspices, would be commended more generally by reason of their freedom from influences which might tend to divert them from their intended purposes.

PLAN OF THE INVESTIGATION.

In determining the method by which these investigations should be conducted, a careful study was made of similar researches which have been made both in the United States and in foreign countries. A survey of the field of research in this direction shows that three principal methods of procedure have been followed.

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[a] U. S. Dept. Agr., Bureau of Chemistry, Bul. No. 69, Pts. I–VI; Bul. No. 83, Pt. I.

In the first case may be cited those investigations which have been conducted by means of artificial digestion. Fortunately for science, the various ferments which are active in digestion in the living animal have been isolated and prepared in a reasonably pure state. By securing as nearly as possible the other conditions which obtain during digestion in the living body, artificial digestion similar thereto can be secured. Thus, if food properly comminuted and kept at the temperature of the stomach, in motion similar to that produced by the peristaltic action of the intestines, be treated by the proper digestive acids and ferments, the chemical actions which occur are entirely similar to those which take place in the living organ itself. Thus, the ferments that digest starch and sugar, those that act upon protein, and those that act upon fats can be studied outside of the living organism. The results which have been obtained by this method of investigation are most valuable, and when the preservatives and coloring matters in question are added, any changes which are produced, either in the degree or in the rate of digestion, can be easily ascertained.

In the second case the problem may be studied by experiments conducted upon the lower animals, and from the results of these experiments inferences may be drawn applicable to the human animal. This line of experiment and investigation has also great merit. The animals operated upon are kept under close control. The amount of food which they consume is easily ascertained. The excreta they produce are collected, and a complete chemical control can be instituted in connection with the digestive process. When preservatives and coloring matters are added to the food of animals thus treated, any changes which take place in the digestive processes or any lesions which are produced in the organs of the body can be ascertained. This method of investigation also has the additional merit that at the end of the period of observation the animal may be killed and changes in its organs which were so slight as to produce no observable effects during life may be sought and discovered. Thus, minute or incipient lesions of the digestive organs or of the other organs of the body are brought to light which otherwise would escape notice. If the digestive processes in the lower animals were exactly the same as those in the human animal, this method of investigation would necessarily be accepted as final and conclusive; but each species of animal has its own peculiarities of digestion, and therefore the results produced on one species by a certain course of treatment might not be secured with an animal of a different species or genus. This fact has led investigators to undertake a third kind of research, namely, experiments with the human animal itself.

This method of investigation also has advantages as well as many disadvantages. For the most part such investigations are carried out upon volunteers, since no one could be forced to undergo any such

experimental treatment except as a punishment for crime. In the second place, the intelligence of the human animal may also be utilized in the study of the effects produced. Symptoms which the lower animals might have of distress or malaise when in the incipient stage might escape notice altogether, whereas similar symptoms in a man would be described. Further, it must be admitted that animals under confinement, as is necessarily the case when experiments are made with them, are not wholly in a normal state, whereas the man who volunteers for an experiment of this kind would not chafe or become restive under confinement. Again, it must be considered that as the investigations above outlined are particularly applicable to the digestion and health of man, it is evident that the experiments made upon man himself would be the most decisive in all cases.

The one great disadvantage of experiments of this kind is the inability to absolutely control the "experimentee." Where a large number of persons is to be considered and the experiment is to extend over a long period it is evidently impracticable to secure a direct personal control of every action of each one during the whole time. In the present case the young men selected (who volunteered for the experiment) continued their usual vocations. They were simply placed upon their honor and neither watched nor confined. The data which are obtained in this way are therefore open to the objection, in some cases, that the rules and regulations set for the conduct of the experiment may have been transgressed without the knowledge or consent of the observer. While this is a valid objection and should have full consideration, it must not be forgotten that among the twelve young men upon whom the experiments were conducted it is not likely that the violations of their pledge of honor would be sufficiently numerous to affect in any marked degree the results as a whole. Further, it must be remembered that the greater number of those upon whom experiments were made were young men of approved character, many of whom had college training, and a large majority of whom were engaged in scientific pursuits. All these facts are of more or less importance in considering the character of the data secured. It would be unwise to claim that among so many persons and amid so many temptations no violation of the pledge took place, yet it must be admitted that upon the whole we can be reasonably certain that the obligations voluntarily assumed were discharged faithfully and conscientiously. Any departures from the set rules of conduct which might occur would not be made with any design of affecting the data, and therefore, as a whole, the errors which might arise from this source would, according to the doctrine of probabilities, be largely compensatory. Thus, while in any individual case the data might be rendered unreliable by reason of such departures from the set rules, the results as a whole would not be seriously affected. The plan of

the work, therefore, included the idea of conducting the investigations with volunteers—young men, most of whom were connected with the Department of Agriculture—and provided that during the period of observation they should continue in their usual vocations.

ORGANIZATION OF THE WORK.

A large number of volunteers offered their services for the investigations above outlined. Each applicant for a place at the experimental table was required to fill out a blank describing the usual conduct of his daily life. This blank is as follows:

Descriptive blank to be filled out by applicants for hygienic table.

(1) Name and address. (2) Date of birth. (3) Have you had any sickness confining you to your room within a year? If so, state nature and duration. (4) Are you subject to indigestion? If so, state character and frequency. (5) Do you use coffee, tea, or chocolate with your meals? If so, state at which meals and what beverage you prefer. (6) Do you use tobacco? If so, state in what form, at what times, and quantity. (7) Do you use wine, beer, or other alcoholic beverages? (8) Do you go to stool regularly? At what hours? (9) At what hours do you usually urinate? (10) At what hours do you go to bed? How many hours do you usually sleep? (11) Do you engage in any unusual or violent exercise? If so, what?

From the data thus obtained the fitness of the applicant for the long continued and careful work which he would be called upon to do was largely determined. The reputation of the applicant for reliability and probity of conduct was also a matter of importance, since it was evident that young men whose truthfulness and honesty could be questioned would not be suitable persons for the work.

In addition to the other information which was available, it should be remembered that all the young men who volunteered for the experimental work had passed examinations to enter the civil service of the Government. These examinations look carefully into the moral character of the applicants, their reputation for sobriety and reliability, and their general reputation among those intimately acquainted with them.

In selecting from the number of applicants it was decided that those addicted to the use of alcoholic beverages should be excluded. This exclusion was not based upon any prejudice which might arise from the use of alcoholic beverages, nor was it an expression of any principle or opinion relating to this habit. Since, however, the young men selected were to pledge themselves neither to eat nor to drink anything which was not given them at the experimental table, except water, it was thought that they could more easily keep that pledge if they were not addicted to the use of alcoholic beverages.

In regard to the use of tobacco a different principle was followed. Applicants who used tobacco in moderation were not rejected for that reason. It was required of them, however, that they should make a

statement in detail as to the manner in which they used tobacco, the kind and amount used, and times of day when used. They then pledged themselves to continue the use of tobacco in exactly the same way, in the same quantities, and at the same times during the whole of the observation period. In this way any effect which the use of tobacco might have upon health and digestion would be uniform throughout the whole period of observation, and therefore would not influence the data relating to the use of preservatives and coloring matters.

NUMBER OF PERSONS SELECTED.

Mention has already been made of the differences between species of animals in regard to digestive processes. In the same species of animal, however, marked idiosyncrasies exist among different individuals in relation to kind of food and rate and degree of digestion. These idiosyncrasies in the human animal are often accentuated, and failure to consider them might lead to a grievous error in the interpretation of analytical data. To eliminate, so far as possible, the effect of any idiosyncrasy, it was deemed advisable to select as many candidates as possible for the purpose of experiment. The facilities of the kitchen, the dining room, and the laboratory were carefully considered, and the decision was reached that 12 persons would be about the maximum number which could be placed under observation. When the quantity of analytical work connected with an experiment of this kind is considered, it is evident that only with a very large laboratory and a great number of assistants could work with more than 12 be properly conducted.

CONTROL OF MEMBERS OF THE TABLE.

The 12 persons chosen for the table were selected in harmony with the principles above described and were fully instructed in regard to the nature of their duties. Since it was not advisable to keep them under continual observation, it was arranged that half of them should be under observation and the other half should be left at liberty to pursue their usual habits of life, conforming, however, as nearly as possible, to the methods of living which they would follow when under observation. Thus the time of relaxation in each case was equivalent to the time of observation. In fact, the nature and extent of the work which the members of the table would be called upon to do were fully explained to them before they were asked to sign the pledges necessary to place them under the self-restraint which the character of the work required. This having been arranged, each of the members of the table subscribed to the following pledge:

I hereby agree, on my honor, to follow implicitly the rules and regulations governing the hygienic table of the Bureau of Chemistry during the time that I am a

member thereof. I agree, during my attendance at the table of observation, to use no other food or drink than that which is provided for me, with the exception of water, and that any water not used at the table will be measured and reported daily as a part of the ration. I further agree that I will continue to be a member of the hygienic table for a period of at least six months from December 1, 1902, unless prevented by some illness, accident, or unavoidable absence. I agree to continue the regular habits of my life, to indulge in no unusual excess of labor or exercise, and if tobacco be used it shall be used at such times and in such amounts as will be agreed upon between myself and the Chief of the Bureau of Chemistry.

I further agree that I will not hold the Department of Agriculture, nor any person connected therewith, responsible for any illness or accident that may occur during my connection with the hygienic table.

In order that the observations which they were expected to make upon themselves should be as methodical as possible, blanks were prepared for the entry of the data relating to the character and quantity of food eaten at each meal, and also relating to the temperature, respiration, weight of the body, and other data of a personal nature which would be of value in studying the problems under consideration. Samples of the blanks employed for this purpose are given in the appendix.

HOURS OF MEALS AND BILL OF FARE.

The hours of meals were fixed as follows: Breakfast, 8 a. m.; luncheon, 12 m.; dinner, 5.30 p. m. The members of the table were urged to be as prompt as possible at meals, although in certain circumstances some latitude was allowed. Inasmuch, however, as the food had to be weighed out in advance of the meal time, it was desirable that all should be present promptly at the hour in order that the food should not grow cold or stale. It perhaps would have been desirable to extend the meals over a longer period had it been convenient, since the arrangement above described made a very long interval between the dinner, which was finished usually by a quarter past 6, and the breakfast of the next morning—in all about fourteen hours, during which no food could be taken—while, on the other hand, all of the meals were included within a space of about ten hours. An earlier breakfast, say at 7 o'clock, and a later dinner would have been desirable, but the employment of the young men and the other conditions of the environment made any different arrangement from that adopted inconvenient to the majority of those under observation.

Further than this, it should be mentioned that the hours selected for the meals were those which are customary for persons engaged in the civil service of the United States. For this additional reason it perhaps was wiser not to attempt to change the hours of meals in order to avoid having so long a period between the dinner and the breakfast. The breakfast and dinner were made the principal meals, while the luncheon was of a lighter character, no meat being served.

Since the young men were to be kept under observation for periods

of from thirty to seventy days, it was desirable to make the bill of fare as varied as convenient. To this end the meats selected were roast beef, beefsteak, lamb, veal chops, pork, chicken, and turkey. Fish and oysters were also used. The eggs, which were served twice a week, may also be included with the meats. The butter was of the best quality which could be made and was free from coloring matter and salt. The milk and cream were obtained from dairies carefully inspected by the authorities of the District of Columbia and personally visited by the Chief of the Bureau of Chemistry. The vegetables and fruits were those of the season, and where they could not be obtained otherwise the best grades preserved by sterilization alone were used. The soups, in order to secure uniformity in their composition, were purchased of large manufacturing firms making a specialty of soups. In all cases it was stipulated that none of the foods furnished should have been treated with any preservative.

All the preserved foods which were employed had either been kept in cold storage, as was the case with the meats and the fowls, or been subjected to sterilization and subsequent exclusion of the air, as was the case with some of the vegetables, fruits, and soups. Assurances that these bodies were free from any chemical preservative or other antiseptic were secured from all the dealers, and these assurances were confirmed by our own examinations.

Coffee and tea were allowed in moderate uniform quantities to those who were in the habit of drinking these beverages. Desserts of various kinds were employed at regular times, consisting of custards, rice pudding, and ice cream made with the best cream, sugar, and a flavoring substance. A liberal supply of fruits was incorporated with the food supply, either those in season or those preserved by sterilization.

The bill of fare was changed every day, but recurred regularly in seven-day periods. This arrangement avoided the monotony of eating the same kind of food on successive days, and at the same time favored simplicity by the regularly recurrent use of established rations. This was convenient, both for the cook and for the steward, to guide in the one case in the methods of the preparation of the food, and in the other to determine the character of the supplies to be purchased.

Two rooms in the basement of the laboratory building were equipped as kitchen and dining room, respectively. The kitchen was supplied with two gas ranges and a full equipment of culinary utensils. The dining room was plainly, yet substantially, furnished with the necessary articles for preparing a table in a neat, attractive, but not expensive, manner.

SERIES AND PERIODS OF OBSERVATION.

The entire experiment with boric acid and borax was divided into five series of observations, Series I, III, and V dealing with one set of

six men, and Series II and IV with the other set. Three divisions were made of each series of observations, namely, "fore period," "preservative period," and "after period." The time assigned to each of these periods varied, and the total time of the three periods varied from thirty to seventy days. The preservative period was divided into subperiods, differing in the amounts of the preservative used. The time covered by the various series, periods, and subperiods is shown in the following table:

TABLE I.—*Divisions of the series, showing dates of periods and subperiods.*

Series and period.	Date of beginning.	Date of ending.
Series I	Dec. 16, 1902	Jan. 13, 1903
Fore period [a]	do	Dec. 21, 1902
Preservative period	Dec. 22, 1902	Jan. 3, 1903
First subperiod	do	Dec. 26, 1902
Second subperiod	Dec. 27, 1902	Dec. 30, 1902
Third subperiod	Dec. 31, 1902	Jan. 3, 1903
After period	Jan. 4, 1903	Jan. 13, 1903
Series II	Jan. 19, 1903	Feb. 21, 1903
Fore period	do	Jan. 27, 1903
Preservative period	Jan. 28, 1903	Feb. 10, 1903
First subperiod	do	Jan. 31, 1903
Second subperiod	Feb. 1, 1903	Feb. 4, 1903
Third subperiod	Feb. 5, 1903	Feb. 8, 1903
Fourth subperiod [b]	Feb. 9, 1903	Feb. 10, 1903
After period [c]	Feb. 11, 1903	Feb. 15, 1903
Supplementary period	Feb. 16, 1903	Feb. 21, 1903
Series III	Feb. 19, 1903	Mar. 19, 1903
Fore period	do	Feb. 27, 1903
Preservative period	Feb. 28, 1903	Mar. 11, 1903
First subperiod	do	Mar. 3, 1903
Second subperiod	Mar. 4, 1903	Mar. 7, 1903
Third period	Mar. 8, 1903	Mar. 11, 1903
After period	Mar. 12, 1903	Mar. 19, 1903
Series IV	Mar. 20, 1903	Apr. 22, 1903
Fore period	do	Mar. 27, 1903
Preservative period	Mar. 28, 1903	Apr. 14, 1903
First subperiod	do	Mar. 31, 1903
Second subperiod	Apr. 1, 1903	Apr. 4, 1903
Third subperiod	Apr. 5, 1903	Apr. 9, 1903
Fourth subperiod	Apr. 10, 1903	Apr. 14, 1903
After period	Apr. 15, 1903	Apr. 22, 1903
Series V	Apr. 24, 1903	June 29, 1903
Fore period	do	May 1, 1903
Preservative period	May 2, 1903	June 20, 1903
First subperiod	do	May 13, 1903
Second subperiod	May 14, 1903	May 25, 1903
Third subperiod	May 26, 1903	June 6, 1903
Fourth subperiod	June 7, 1903	June 20, 1903
After period	June 21, 1903	June 29, 1903

[a] For the study of body weights the fore period of Series I began December 8.
[b] Only two members of the class went through the fourth subperiod of Series II, and because of insufficient data this subperiod is omitted from averages.
[c] As planned, Series II was to have an after period, but because of illness of all members of the class there was none.

The object of the "fore period" was to determine as nearly as possible the quantity of food required to maintain the body weight at nearly a constant figure and to determine the normal metabolism as a basis of comparison with that of the preservative period. Preceding the fore period the quantities of food freely chosen by each individual were noted so that some idea might be formed of the proper amount to be weighed or measured. If it was evident that too much food had

been habitually consumed, keeping the body in a plethoric state, the rations were cut down somewhat, in order that this condition might be removed. The quantity of the ration was, therefore, varied either by increase or decrease until at the end of about ten days there was no very marked daily change in weight. It was found impracticable, however, to secure an absolute constancy of body weight, since the climatic conditions, slight differences in the amount of exercise, and variations in the quantity of excreta all combined to produce variations in weight (as ascertained at any given period of the day), which are more or less independent of the actual quantity of food consumed. In order that these daily variations may be eliminated from consideration in the comparison of data, the average weight for the "fore period" is taken as the initial point.

The quantity of the ration having been thus determined by the observations of the "fore period," the "preservative period" is entered upon. During this time the quantity of ration previously determined is given without variation, except in case of sickness or some unavoidable condition, and to this ration a certain quantity of the preservative to be studied is added.

Borax was selected as the first preservative to be experimented with, both because it is probably the most important of the commonly used preservatives and also because it lends itself the most readily to purposes of demonstration. The preservative was exhibited in two forms, namely, borax and boric acid, as it was thought possible that the soda entering into the former might produce some modification of the results.

During the first part of the experiments here described the borax or boric acid was mixed with the butter. In later periods of the study it was deemed advisable for many reasons to administer the preservative in capsules. When it was realized that a certain article of food contained the preservative, a natural distaste for this article was developed, due largely, perhaps, to mental attitude. Since it was known by all that preservatives were administered, there seemed to be no valid reason why they should not be given in capsules in order that the prejudice against any particular article of food might be avoided. It is true that objection might be made to this method because it is so different from the actual method of consuming preservatives when added to foods in the ordinary way. Preliminary experiments with the gelatin of the capsules showed that it dissolved in a very few moments in the digestive ferments.[a] This having been established, it is evident that in a few minutes after the administration of a capsule containing borax its gelatinous envelope would be dissolved, and by the peristaltic action of the stomach the contents of the capsule would be mixed with those of the stomach. The nitrogen contained in the capsule was determined (0.024 gram) and allowed for in making the

[a] See p. 32 for description of experiment.

balance of the daily rations in Series V. Its disregard during the twelve days of Series IV when capsules were introduced experimentally in no way affects the results.

In the administration of the preservative small quantities were first given, approximately as much as would be consumed in eating foods preserved with borax, such as butter and meat. These quantities were progressively increased for the purpose of reaching, if possible, the limit of toleration of the preservative by each individual. For each variation of the quantity given a separate study of the digestive processes as influenced by the preservative was made.

At the end of the "preservative period" the "after period" began. During the "after period" the same quantities of food were given as in the preservative period, the preservative, however, being omitted. The object of this "after period" was to restore the individual as nearly as possible, if there had been any disturbance of his physical state, to the condition precedent to the beginning of the "preservative period."

During the entire time from the beginning of the "fore period" to the end of the "after period" the foods were weighed or measured and analyzed and the excreta collected and analyzed.

DURATION OF THE EXPERIMENTAL STAGES.

The first decision in regard to the duration of the experimental work was largely empirical. The one object which was sought to be obtained was to make it long enough to reach reliable conclusions. The effect of the duration of the test was considered of paramount importance, inasmuch as it is evident, assuming that deleterious or favorable effects are produced, that they would not become fully manifest without a sufficient lapse of time. If the preservative in question be given in very large quantities, immediate effects, either favorable or unfavorable, will be noticed. If, on the other hand, it be deemed desirable to begin with quantities approximating those which would be secured by eating foods preserved therewith, a longer time would probably elapse before any noticeable effects would be produced.

A period of ten days as a "fore period," in order to secure the equilibrium of the body, has proved to be a reasonably satisfactory one. In the earlier experiments the period during which the preservative was given was also fixed for ten days, or approximately so. Experience showed that this was not a sufficiently long time. Fifteen or twenty days at least should be allowed for such observations. Especially is this the case if the preservative be given in increasing amounts, as was done throughout most of the investigations here described. A convenient division of the time is into four-day periods, the increases in the dose of the preservative to come at the end of each four days.

Four such increases are desirable at least, and hence the period of the experimental study of the preservatives, as a rule, should not be less than twenty days.

Unless a great disturbance of the normal functions has been produced by the preservatives administered, an "after period" of ten days will be found sufficient in most cases to restore the functions of the body to their normal state and to bring the weight of the body, if it has been changed, back to the normal. In many cases, however, there may be an accumulation of the preservative in the body, requiring a considerable part of the after period for its complete removal. In such cases any effects which may have been produced are likely to be manifested for many days.

In the discussion of the data which follow, the duration of the periods of observation will be indicated in each case.

COLLECTION OF EXCRETA.

Where the individual is under constant observation and is devoting his whole time to the experiment, the matter of the collection of the excreta is simplified; but the problem of making collections from so many persons engaged in the usual vocations of life was a matter of some difficulty.

The importance of regularity in the hours of voiding the excreta was impressed upon all. Bottles were provided which each individual could take with him during the day or during his absence from the laboratory, and in so far as the urine was concerned little difficulty was experienced in collecting it without undue annoyance. The matter of the collection of the feces was much more difficult. The problem was studied from many points of view, and the final decision was to adopt a special form of can, which was found both cheap and efficient. This can is described under the head of analysis of feces. (See fig. 1, p. 26.)

MEDICAL SUPERVISION.

It was deemed important to have competent medical supervision of the members of the experimental class in order that the results of the investigations might be studied also from the point of view of the physician. It was also thought best that this supervision should come for this purpose from an official source. To this end the Secretary of Agriculture addressed the following communication to the Secretary of the Treasury:

> I have the honor to ask that you request the Surgeon-General of Public Health and Marine-Hospital Service to detail a physician from his staff to make physical and medical examinations of the young men employed in this Department in testing the effect of preservatives upon the health of the consumer.
>
> There will not be any great drain upon the time of this expert, since the examinations are to be made only about once in ten days, on six young men, and will not

consume probably over two hours, making a total of not to exceed six hours' service per month.

In this connection, I beg to suggest that the Surgeon-General arrange with Dr. H. W. Wiley, the Chief of the Bureau of Chemistry, for the details of these examinations.

The following reply was received to the above communication:

I have the honor to acknowledge receipt of your communication of January 28, 1903, requesting that the Surgeon-General of the Public Health and Marine-Hospital Service be asked to detail a physician from his staff to make physical and medical examinations of the young men employed in your Department in testing the effect of preservatives upon the health of the consumer.

In reply I have to inform you that your communication has been forwarded to the Surgeon-General of the Public Health and Marine-Hospital Service, who informs me that he will detail Asst. Surg. Gen. H. D. Geddings to make the desired examinations.

The Surgeon-General further informs me that he has communicated with Prof. H. W. Wiley, the Chief of the Bureau of Chemistry of your Department, and that Doctor Geddings has been instructed to arrange details with Professor Wiley in the matter.

In harmony with the above arrangement Doctor Geddings regularly visited the young men under experiment once a week, giving them a careful physical examination, inquiring in regard to symptoms of any disturbances in their physical state, and prescribing for them when they fell ill, either incidentally to their work or independently thereof. Before this time, however, during the first table, the medical examination was made by Dr. E. B. Behrends. Unfortunately, in several cases, the members of the training table suffered severely from colds, influenza, and grippe to such an extent that their services were often lost during a whole period. These cases of illness, not due to the action of the preservatives, are duly noted in the proper places in the details of the experimental work.

Doctor Geddings classified and arranged his notes respecting the various members of the table, and the data obtained by him are incorporated in this report.

EXAMINATION OF THE BLOOD.

Any changes which might take place in the relative number of corpuscles in the blood, or in the blood coloring matter, are of value in determining the general effect of the added preservatives upon health and digestion. To determine these the ordinary methods of counting the blood corpuscles and measuring the coloring matter in the blood were followed. Valuable help in the initiation of this work was obtained from Dr. William B. French and Dr. J. H. McCormick. The actual examination of the blood, for the purposes mentioned, was conducted by Messrs. B. J. Howard and C. P. Knight. The examination of the blood was not made at the beginning of the work, and so these observations do not cover the whole time of the experiment.

DETERMINATION OF TEMPERATURE AND PULSE.

The temperature of the blood was taken sub lingua before and after dinner each day. This method is probably the least accurate of all in common use. It is, however, convenient and easy. Since the object of the determination was to disclose any notable departures from the normal, the method was considered fairly reliable. Standard clinical thermometers of maximum registration were used for this purpose, each subject being supplied with a separate thermometer. These thermometers were all graduated through the courtesy of the Bureau of Standards.

The rate of pulse was also determined in connection with the determination of the temperature. This is, however, not a matter of so very much importance because of the ease with which the rate of pulse is varied by exercise and emotional influences.

In general, an attempt was made to control as fully as possible all the avenues which might lead to any useful information concerning changes, even of a minute character, in the functional activities of the body during the period of observation. As has already been intimated, the final verification of any small changes of an organic nature, especially of incipient lesions, which may take place is denied in experiment upon human beings, but, in so far as possible, any intimations of such changes which could have been secured by any of the ordinary methods of study were noted.

In data of this kind, namely the determination of the temperature, rate of pulse, etc., where dependence is placed upon the subject himself, there are doubtless errors of observation which are undetected. Instructions, however, were given, and in so far as possible carried out, to the effect that any variation of a marked character from a normal state must be verified by a second observer. This rule applied, not only to the variations in the body weight from day to day, but also to the departures of the temperature from the normal, and to the variations in the rate of pulsation of the heart. Thus, whenever one individual in the class noted any marked variation from the normal he called upon either one of the superintendents or one of his fellows to verify the numbers which he had observed. By this precaution many errors which otherwise would have crept into the reports were avoided.

BODY WEIGHTS.

The weights of the body were ascertained by means of a platform scale with agate bearings, and of a delicacy sufficient to register easily differences cf weight of 10 grams when carrying a man of average weight. There was of course some little annoyance occasioned in taking the weights because it was necessary that they be taken naked. It is not safe to assume that the weight of clothing remains constant,

for even if the same kind or character of clothing be worn the variation in weight is very great because of changes in the hygroscopic condition of the atmosphere. Thus a given amount of clothing would show very different weights on a dry and on a wet day.

Certain variations in weight from the normal have already been explained, and in the general discussion of the influence of weights it is always advisable to take the average weight of a period of days rather than the separate weight for any one day. In the interpretation of the value of the body weight it should not be forgotten that a loss in weight must not be interpreted to mean always defective nutrition, nor a gain in weight be attributed always to conditions favorable to health. The accumulation of an excessive amount of fat is not an evidence of excellent digestion or normal increase. It may be due to a perversion, to some extent, of the processes of assimilation. On the other hand, a loss of weight is not always to be interpreted as indicating an unfavorable condition of nutrition, because in persons who indulge in overfeeding or who have accumulated excessive fat for other reasons a diminution of weight may be distinctly favorable to better digestion and health. Nevertheless, in a state of normal equilibrium, when the food supply remains constant any marked variations in weight can not be regarded as wholly normal.

METHODS OF ANALYSIS.

The methods of analysis employed were those, in so far as they applied, of the Association of Official Agricultural Chemists, and, in other cases, those commonly used by physiological chemists.

ANALYSIS OF FOODS.

So far as possible foods were composited or received in large quantities and in such condition that a fair sample could be taken of a lot which would last the table for considerable time. For instance, in the case of soups, vegetables, and fruit products (canned fruit, jellies, and jams) arrangements were made with manufacturers to receive the product of a single kettle canned in such a manner that the contents of the separate cans would be as nearly uniform as possible. In this way one or two cans of each lot were taken as a sample, and a single analysis was made to answer as long as that shipment lasted. A great amount of analytical work which would have attended the examination of each food at each meal was thus avoided.

Potatoes were cooked without seasoning, and a composite sample of all the potatoes served during the subperiod was subjected to analysis. The bread was purchased of a neighboring baker. Throughout the entire experiment only one variety of bread, of very constant composition, was employed. In all cases the water content of each food for

each meal was determined, and the results obtained from the analysis of canned goods or of composite samples were calculated to the moisture content of the food for that meal.

Dried composite samples of bread and potatoes were ground and left in an unstoppered bottle, with occasional mixing, for several days, until they had absorbed the maximum amount of moisture from the surrounding atmosphere, when they were termed "air dried." They were then subjected to analysis. The samples of air-dried substances were weighed for all determinations within as short a space of time as possible, although the change of moisture content after the equilibrium was once reached would naturally not be very sudden.

Owing to the difficulty of making a mixture sufficiently uniform for sampling, each sample of eggs and pudding was dried and ground before analysis, the moisture content in the fresh sample being previously determined. In the case of meat, fish, and oysters the substance as taken from the table was passed several times through a sausage grinder and subjected to complete analysis without drying. In some cases the duplicate results on these last-named products were not so close as could be desired, and a repetition of the analysis was necessary. Owing to the fact, however, that drying would liberate fat and thus lead to great annoyance and inaccuracy in the preparation of the sample it was considered best to examine the samples of meat, fish, and oysters without drying.

In all cases when samples of food were weighed for the table a sample for analysis was placed in a jar closed with a screw cap, and then coated with paraffin to prevent the loss of moisture. The samples were then placed in a refrigerator and kept until the following morning, when they were examined promptly. The breakfast samples, however, were examined immediately. The determinations made were water, nitrogen, phosphoric acid, fat, and heat of combustion.

DETERMINATION OF WATER.

From 2 to 20 grams of the sample, according to its water content, were placed in a flat-bottomed dish (lead bottle caps, varying in diameter from 2½ to 3½ inches, were employed) and heated over night in a water-jacketed drying oven, at the temperature of boiling water. This was a longer time than was required in the majority of cases, but, considering the large volume of work, it was found impracticable to dry simply to constant weight, and the errors due to a longer drying than was necessary were found to be inconsiderable. All substances were dried in the manner and at the temperature stated above. The fact that the results obtained with fruits were too high, owing to the dehydration of invert sugar at the temperature of 100° C., was considered, but owing to the varying sugar content of samples of different

varieties it was thought best to subject all samples to the same method of drying. The water determinations were all made by Mr. W. L. Dubois.

DETERMINATION OF FAT.

The residue from the determination of water was transferred to an extraction tube and the lead bottle cap which contained it was cut into small pieces and also introduced into the tube. The tube was then placed in position in a continuous-ether-extraction apparatus, mercury-sealed, and the residue extracted with anhydrous sulphuric ether for thirty-six hours. The fat determinations were made by Messrs. Warner, Given, Burd, and Jones.

DETERMINATION OF NITROGEN.

Nitrogen was determined by the Gunning method, as described in Bulletin 46 of this Bureau. Owing to the large volume of work it was found impossible to take into consideration the nature of the nitrogenous compounds. The total content of nitrogen only was determined. The nitrogen determinations were made by Messrs. T. C. Trescot and L. S. Munson, with the assistance of Mr. H. W. Houghton.

DETERMINATION OF PHOSPHORIC ACID.

The samples were moistened with water, treated with magnesium nitrate, dried, and ignited, and a solution was prepared as directed on page 12 of Bulletin 46 of the Bureau of Chemistry. In this solution the phosphoric acid was determined by the volumetric method of the Association of Official Agricultural Chemists given on page 13 of the bulletin above mentioned. This method consists in dissolving the yellow precipitate in a definite amount of potassium hydroxid, and titrating with a standard solution of nitric acid. The phosphoric acid determinations were made by Mr. L. M. Tolman.

DETERMINATION OF HEAT OF COMBUSTION.

Almost all of the samples were burned in the bomb calorimeter. In some cases of foods having a very high water content, such as canned fruits and soups, the heat of combustion was calculated, using the factors 5900 for protein, 9300 for fat, and 4200 for carbohydrates. The heat of combustion determinations were all made by Mr. E. M. Chace.

ANALYSIS OF URINE.

The urine was collected and preserved in bottles of about 1 pint capacity. It was kept in a cool place and returned to the laboratory each morning. The entire volume for each man for twenty-four hours was then mixed, measured, and subjected to analysis. With the excep-

tion of water and phosphoric acid, the determinations were made as described under food.

The phosphoric acid was determined by the uranium acetate volumetric method,[a] the only modification in the method given by Sutton being that the urine was diluted with 2 volumes of water. This was found to be advisable for two reasons: First, to reduce the color, which otherwise interfered to some extent with the end reaction; second, because of the large amount of phosphoric acid present, which was found to be too great for exact results. The solids were determined by multiplying the specific gravity minus 1 (at 25°) by the factor 2450, or, as it is more commonly expressed, by multiplying the last three figures of the specific gravity (expressed as a whole number where the result is entered in four decimals) by 0.245. This factor is considerably higher than that which has ordinarily been employed (0.233). It was the result of considerable experimental work on the part of Mr. Weber, who conducted the urine analyses, and it is not greatly different from the results obtained by Long. The clinical examination of the urine was made by Mr. F. C. Weber.

In addition to the determinations previously mentioned, boric acid was determined in the urine. The method employed was that of Thompson.[b] During a portion of the time barium hydroxid was substituted for calcium hydroxid, and the barium precipitate was dissolved in hydrochloric acid and reprecipitated to free the last portions of boric acid from the precipitate. Comparative experiments were also made with methods involving distillation with methyl alcohol, but on the whole Thompson's method was found to be the most satisfactory, both on account of its greater convenience and because of the large amount of soluble salts present, which tended to interfere with the accuracy of the distillation method. The determinations of boric acid on the first series were made by Mr. W. D. Bigelow, and on the second, third, fourth, and fifth series by Mr. J. S. Burd.

ANALYSIS OF FECES.

The feces were collected in a can contrived for that purpose, and dried in a current of air at the temperature of boiling water. The can employed is shown in the accompanying illustration in its place in the apparatus, a cross-section view (*a*) also being given. It is 5 inches high and 5⅜ inches in diameter, closed with a friction top. Its construction is based upon the principle that with a beveled top fitting into an even opening a practically air-tight union can be secured. These cans are similar in their construction, so far as the opening is concerned, to those commonly used for holding paints.

In order that the same can in which the feces were collected might

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[a] Sutton's Volumetric Analysis, eighth edition, page 436.

[b] Sutton's Volumetric Analysis, eighth edition, page 98.

be used in drying them, it was necessary to attach apparatus whereby a current of air could be drawn through the can during the process of desiccation. This was accomplished by soldering a tube to the side of the can near the top and conducting the air, by means of a glass tube shown in the section, to the bottom of the can. A second tube was soldered to the opposite side of the can making connection with the suction apparatus. The cans were of a magnitude to hold all the dejecta in each case for a period of twenty-four hours. The weight of the can being previously known, the weight of the moist dejecta for the twenty-four hours was easily determined.

For desiccating purposes the cans were arranged in a battery of six for each series, though only five are shown in the drawing. In order to collect any volatile nitrogenous or sulphur compounds, as well as to determine the rate of passage of the air through the can, each one was provided with washing bottles, as shown in the figure, through which the emergent air bubbled on its course toward the vacuum pump. By opening or closing the communication with the can the rate of passage of the air was made uniform. Proper reagents were placed in the washing bottles to hold back any of the volatile compounds above mentioned.

The vacuum was produced by a large aspirator connected with the water service in the basement of the laboratory. As often twelve or eighteen cans were operated at once it was necessary to have this jet of rather large size. It was found that a jet of about one-fourth inch supplied by a 2-inch pipe was entirely sufficient to produce a vacuum for drying a series of three sets of cans as above arranged. The cans rested in a copper tank filled with water to within about 2 inches of the top. This water was maintained at a constant level by an automatic arrangement of the usual description. The heat was applied by a series of Bunsen lamps, so that all parts of the copper tank were evenly heated. The temperature of desiccation was slightly below the boiling point of water. At this temperature, and with the current of air regulated as above described, the complete desiccation of the contents of the can was accomplished in twenty-four hours. The loss of water having been determined by reweighing the can, its dried contents were ground and bottled for analysis.

The construction of the can and desiccating apparatus is shown in the accompanying figure (fig. 1) in which *a* shows the cross section of the can; *b*, the water reservoir connected with the water supply, arranged to fill automatically the baths used for drying the cans; *c*, *c*, lead pipes to supply air to the water reservoir for the purpose of permitting the water to flow from it into the bath to maintain a constant level; *d*, *d*, pipes to convey water from the reservoir to the bath.

At first the ordinary tin paint cans were obtained from the manufacturers, and the side tubes soldered to them. It was found, however,

that the quality of tin was so poor that a single can could only be used from three to five times. It proved more advantageous to have cans made to order of heavy tinned copper. The usual stock tin flange and caps, however, were still employed.

Before being used the cans were weighed, and after the collection of the feces a second weight was taken. The can was then placed in the water bath shown in the accompanying cut, attached to a vacuum; the water was heated to approximately the boiling point, and a brisk current of air was drawn through the can. It was at first feared that a loss of ammonia would result from heating at this temperature, and

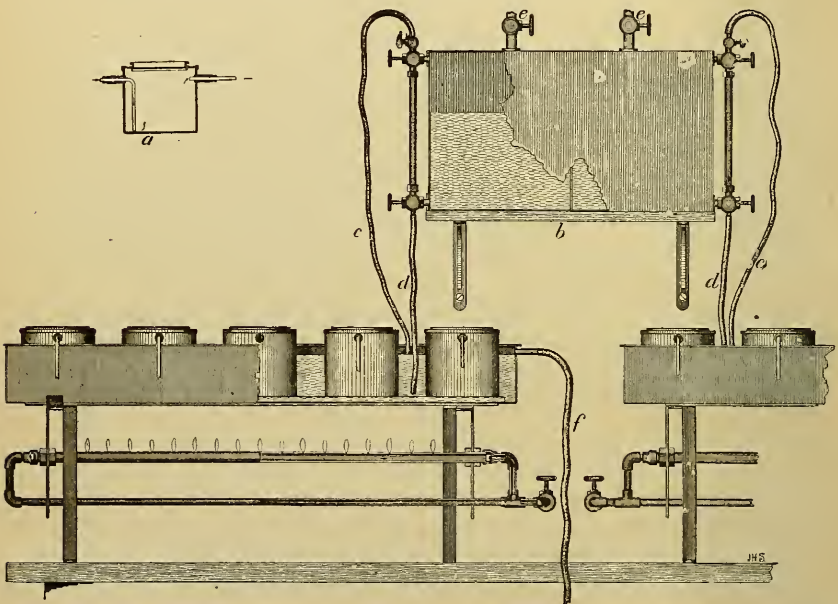

Fig. 1.—Apparatus for drying feces: *a*, Section of can; *b*, water reservoir; *c* and *d*, tubes for preserving constant level of water in bath; *e*, *e*, valves regulating water supply for reservoir; *f*, overflow pipe for water bath.

wash bottles containing sulphuric acid were placed in the circuit immediately under the can. The amount of ammonia so collected, however, was so small as to appear negligible.

The cans were placed in the bath each morning about 9 o'clock, and heated for twenty-four hours, when they were usually dry. In some cases a longer period of drying was found necessary. The dried sample was then ground to a fine powder and left in an unstoppered bottle for a period of four days to attract the normal amount of moisture from the air. Samples for the separate determinations were weighed within as short a space of time as possible. The determinations described under food were then made, and by the same analysts.

SPECIAL DIFFICULTIES CONNECTED WITH THE WORK.

COLLECTION OF EXCRETA.

Aside from the usual difficulties connected with analytical practice, which must always be taken into consideration, there are some special points in connection with a work of this kind which must be mentioned. These difficulties are connected chiefly with the collection and analysis of the excreta. The principal object in the analysis of the excreta, as is evident, is to establish the relation between certain ingested elements and those which appear in the excreta. Certain forms of food are more or less completely changed in passing through the body, and are oxidized and manifested as heat and energy. The fats and carbohydrates are types of foods of this kind. Certain other elements in foods, while they undergo marked changes of combination during digestion, assimilation, and excretion, appear in the excreta in practically the same quantity in which they are found in the food. Among these substances may be particularly mentioned nitrogen, sulphur, and phosphorus.

In a state of equilibrium, where the body is exercising all of its functions in a normal manner, and where there is neither increase nor decrease in body weight, the quantities of nitrogen, sulphur, and phosphorus which are excreted should be the same as those which are ingested in the food. This should not be construed to imply that the actual elements eaten on one day appear in the excreta of the next day. This is far from being the case. It may require many days, weeks, or even months, for a given particle of nitrogen, sulphur, or phosphorus ingested in the food to reappear in the excreta. It is sufficient, however, for the purpose of establishing the balance between these ingested substances and those which are recovered in the excreta to assume that the quantities forced out of the body each day in a normal state are equivalent in all respects to those which are introduced. As an illustration, the case of a tube long enough to hold a hundred marbles may be cited. If an additional marble be forced in at one end of the tube, a marble of equal magnitude will be forced out at the other, and thus the balance will be maintained in the tube. So in a state of equilibrium each molecule or atom of nitrogen, phosphorus, or sulphur entering the body will be represented by a similar molecule or atom of these respective substances forced out of the body.

Were it practicable in experiments such as these to collect absolutely every particle of emergent nitrogen, for instance, the balance between the entering and departing nitrogen should be complete. In these experiments, however, no attempt was made to collect any of the nitrogen except that removed from the body in the urine and feces. This, of course, represents nearly all of the nitrogen excreted,

but not quite all. Small amounts of nitrogen are separated from the body in the hair, the nails, and the desquamations from the surface of the body. Thus in a perfectly normal state of the body the sum of the nitrogen excreted in the urine and the feces would not represent the total amount ingested in the food. On the other hand, in abnormal states of the body, where the breaking down of the tissues is going on more rapidly than their building up, just the reverse condition would prove true. The same statements may be made with reference to the sulphur and phosphorus.

It is evident, however, that if a relation can be established between the total amount of these substances entering the food and that leaving the body in the urine and feces, any disturbance of that relation by the addition of an abnormal constituent to the food, such as a preservative, can be easily detected. Therefore, for the purposes of these investigations, the fact that complete collection of these elements from the body is not secured is not a valid objection to the deductions which are made from the data. Nevertheless, it should be pointed out with clearness and frankness that in the conditions in which these experiments were made there are possibilities of error which must not be overlooked. Carelessness on the part of the observer himself in the collection of the excreta, a violation of the pledge in regard to the conduct of life, or an error in analysis would each tend to render the results of less value. That such errors have been wholly excluded from the data submitted is not likely. On the other hand, errors of this kind which may have been introduced could not have been purposely made in order to modify the final results of the investigation. Hence it is fair to assume that such errors are to a certain extent compensatory and that they do not affect seriously the conclusions based upon the data as a whole. Those who have worked in investigations of this kind, however, will understand the great difficulties which attend them, as well as the care which has to be exercised in their conduct, and will be the more ready to excuse any unavoidable error which may have crept in, either in the conduct of the work or in the morale of those who were subjected to the experiment.

EFFECT OF REGULAR HABITS.

Another important factor must be considered in the interpretation of the data which have been obtained in these experiments, namely, the effect upon the physical well-being of the subject produced by regular habits of living, uniform quantity of diet, and general control of the appetites.

It is usually considered by physiologists and physicians that regular habits of life conduce to health and strength. This theory has been corroborated by the results of the experimental work here detailed. While it is true that in many instances during the progress of the

investigation the members of the table were made temporarily ill by the quantities of the preservative administered, it is nevertheless an interesting fact to note that at the end of the year, after the final "after period" had been passed, they appeared to be, and declared themselves to be, in better physical condition than when they entered upon the experimental work seven months before.

This fact, as has already been stated, must not be neglected, since it is evident that the tendency toward a good physical state and good health produced by the regular habits of life might counteract the unfavorable tendency of any exhibited preservative; so that at the end of the observation, if the results were judged only by the condition of the subject at that time, they might be pronounced negative, or even helpful, whereas in point of fact the preservative might have produced injurious effects. Self-restraint, temperance, regularity of exercise, regularity in hours of sleep and hours of work are believed to have favorable effects, and these were manifested in a marked degree throughout the whole of the experimental work.

MENTAL ATTITUDE.

That the personal attitude of the individual experimented upon influences, to a certain degree, the progress of digestion is undoubtedly true. Every physician and physiologist is familiar with the marked effect which mental states produce upon the bodily functions. These effects may be either favorable or unfavorable. Cheerful surroundings, good company, and, in general, an agreeable environment, tend to promote the favorable progress of digestion. A reversal of the conditions of environment to the disagreeable, combined with mental depression, bad news, and other unfavorable conditions, have exactly the opposite effect.

The question therefore arose in connection with the experimental work as to the advisability and possibility of preventing the mental attitude from producing any effect. A careful consideration of all the conditions of the problem made it clear that it would be impossible to conduct the experiments in any way which would exclude from the knowledge of the participant the fact that preservatives were added to the food. It was fully understood that he was employed for this purpose, and the very moment that the observation began upon his daily life, by weighing the food and collecting the excreta, he would be aware of the fact that he was under observation and was probably partaking of preservatives.

The question also arose whether or not the preservatives should be given in capsules op. nly or whether they should be concealed in the food itself. Both of these methods received a thorough experimental trial. When the preservative was mixed with the food in such a way as to conceal its physical appearance, a certain dislike

of the food in which it was supposed to be was manifested by some of the members of the table. Those who thought the preservative was concealed in the butter were disposed to find the butter unpalatable, and the same was true with those who thought it might be in the milk or the coffee. When, on the other hand, the preservative was given in the capsules with the full knowledge of the subject, much less disturbance was created. In fact, after a day or two, when the subject became used to the fact that he was taking a preservative, it was apparent that the effect of the mental attitude was not at all noticeable. All the foods offered were relished because they were known to contain no preservative, while the preservative itself, exhibited in the form of a capsule, imparted no bad taste or other disagreeable effect.

If an experiment of this kind were to be continued only a few days it is evident that the mental attitude of the subject would be a matter of much concern, but when from thirty to seventy days are employed in one series of observations, and especially when the observations are continued for many months, this effect rapidly wears away, and probably does not influence the final results in any appreciable manner.

The young men were cautioned to avoid discussing among themselves any symptoms which they might notice, and urged not to dwell upon any indications of abnormal conditions which they might experience, but to keep their minds employed on their usual vocations and to avoid thinking, as much as possible, about the experiments which they were undergoing. In most cases this course of procedure had its desired effect, and from the general deportment of those upon whom the experiments were made it may be stated, with a considerable degree of confidence, that the mental state as a whole had very little influence upon the course and progress of digestion.

It is in this particular, namely, the mental attitude, that experiments conducted with artificial digestion and experiments conducted upon the lower animals have decided advantages. Yet it must be admitted that in the latter case the confinement to which the animals are subjected probably produces a mental attitude more prejudicial to normal physiological processes than that produced in the case of the man who understands fully the conditions which surround him.

CLASSIFICATION AND INTERPRETATION OF THE DATA.

The great difficulties of correctly studying the extensive data which these experiments have given and drawing therefrom the proper conclusions are fully realized. The utmost care must be exercised in these cases to remove all possible personal bias and to free oneself, in so far as possible, from the weight of authorities which have been consulted. Public opinion also must not be forgotten in this respect, especially when it is considered that it is almost universally believed

by the great majority of our people that added preservatives are always injurious and in many instances poisonous. But even when personal bias, weight of authority, and public opinion are eliminated from the problem it is still a most difficult one. So many elements enter into its study, so many conditions difficult to control, so many idiosyncrasies are to be reckoned with, so many external causes influencing health which are beyond control, that it is difficult in many cases to decide, where variations are noticed, as to the exact or even apparent cause which has produced them.

The problem, therefore, has been attacked with a full knowledge of its difficulty and with the desire to be conservative and free from dogmatism. It would probably be better if all the detailed data which have been secured could be printed in connection with this discussion, so that the critical reader might be able in every instance to refer to the original figures. Enormous space, however, would be occupied by the data, and the fact that in most cases they would be of little use in detail has led to the decision to publish only such detail as may be necessary to point out the way in which the general data have been obtained. If, as may appear further on, all points of the problem have not been elucidated, the failure has not arisen either from lack of desire or from want of industry in the conduct of the experiment. It is to be attributed, rather, to the limitations placed upon the observers, either by lack of experience or by lack of knowledge, as to the best way in which to classify, digest, and study the data at their disposition. A serious attempt has been made to present these data in their full significance, and in no case has any tampering therewith been counseled, desired, or permitted. The unfortunate fact that many of the data are contradictory must be accepted without question. As the judge and the jury, in the light of contradictory evidence, seek to decide which is the more trustworthy, so have the data herein contained been interpreted with a view, if possible, to giving the greater weight to those which deserve the greater credit.

EFFECTS PRODUCED BY THE PRESERVATIVE.

SCHEDULE OF ADMINISTRATION OF THE PRESERVATIVE.

As has already been mentioned, different methods of administering the preservative were tried. At first it was thought advisable to administer the preservative in the food without indicating to the members of the table the particular article of food which contained it. Both borax and boric acid having but little taste, considerable quantities thereof could be added to certain articles of food, imparting to them neither marked taste nor odor. The boric acid was, therefore, first administered in the butter, for two reasons—first, because it is very often used as a preservative of butter, and, second, because in the finely powdered state it could be intimately mixed with the butter in such a way as not to disclose its presence by any visible signs.

The preservative was administered in butter during both the first and second series. It was not long, however, until the members of the table discovered that the butter contained the preservative, and though there was no decided effect upon the taste, a dislike of the butter was developed. During the third series the boric acid was dissolved in the milk, but before this series was finished the subjects discovered the fact, and a tendency to use less milk was observed. During the fourth series different methods of administration were practiced: During one day it was given in the meat, but this proved to be exceedingly unsatisfactory. The next day it was given in capsules. It was then given for a short period in the coffee, with results similar to those which attended its administration in the butter and the milk. Finally the use of capsules for holding the preservative was adopted as being the most satisfactory way. There is, of course, objection to this method, since it does not distribute the preservative throughout the food, as would be the case when used for actual preserving purposes. The validity of this objection, however, is more apparent than real, since, when properly given in capsules, the containing coats of which are quickly dissolved, the substance, by reason of the motion of the stomach during digestion, is quickly distributed throughout the mass of the food.

In order to determine whether the capsules in which the preservative was administered delayed the absorption of the preservative, 10 capsules containing boric acid were placed in an artificial pepsin solution, made by dissolving 0.1 gram of granulated pepsin in 100 cc of 0.33 per cent hydrochloric acid. The solution was heated to a temperature

of 40° C., the capsules introduced, and the contents of the beaker gently stirred. In one minute and ten seconds after the introduction of the capsules one of them broke, releasing the boric acid, which immediately sank to the bottom of the beaker. At intervals of from five to ten seconds the remaining capsules broke, and within two minutes none was intact. At the end of five minutes both the capsules and boric acid were entirely dissolved.

As before stated, the nitrogen content of the capsule was noted. In order to secure a uniform method of distributing the contents of the capsule throughout the contents of the stomach, it was directed that it be taken at about the middle of the meal, so as to be introduced as nearly as possible into the middle of the contents of the stomach. This method of administration proved by far the most satisfactory of all that were tried. There was no dislike developed for any particular item of food on the supposition that it might contain the preservative, the capsules were tasteless, and no discomfort of any kind was noticed by reason of the temporary concentration of the material in any particular part of the contents of the stomach.

In the following table will be found a detailed statement of the administration of the preservative throughout the whole period of observation. The table will be found useful, not only as a summary of the amount of the preservative given and the quantities given on each day, but also for reference in case of a desire to study the effects produced upon any given subject at any given time in connection with the quantity of the preservative employed. When the preservative was used in quantities not to exceed half a gram per day it was usually given in a single capsule at one meal—generally dinner. When it was given in quantities of 1 gram a day it was taken at two meals in ½-gram capsules each. When given in quantities of 2 grams a day it was taken in ½-gram capsules at two meals and in two ½-gram capsules at one meal. When taken in quantities of 3 grams it was given in two ½-gram capsules at each meal. When given in larger quantities, requiring more than 1 gram at one meal, more than two capsules were given. When administered in the butter it was distributed in a similar manner, according to the number of molded lumps of butter eaten by each member of the table. Each lump of butter of 15 grams was so mixed with the preservative as to contain half a gram or 1 gram, respectively, according to the quantities given.

In the table which follows the amounts given at each meal are not specified, by reason of the undue extension of the tabular statement which would be necessary, but the total quantity given on each day is recorded. The distribution of the capsules during the various meals of the day will be sufficiently evident from the description which has already been given above of the times of administration. When any

variation in the amount given to any individual occurred it is noted by appropriate references in the table itself.

Under the head "Special series" is a record of the amounts given to two of the original members of the table, who, by reason of illness other than that due to the administration of the preservative, were found unable to continue the regular course of experimental work. It was thought, however, that it would be of use to administer very small quantities of the preservative to these individuals throughout a long period of time in order to ascertain, if possible, by such an administration, any visible effect which this long-continued use of the preservative might produce. It is believed that the following data are sufficiently detailed to answer all purposes for reference and particular study.

TABLE 11.—*Schedule of administration of boric acid and borax.*

[Quantities expressed in terms of boric acid.]

Date.	Method of administration.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.	No. 12.	No. 13.	No. 14.
Series I: *a*		*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22–26, 1902, inclusive (daily quantity).	In butter	1	1	1	1	1	1	...	...	...	...	...	...	...	...
27–30, inclusive (daily quantity).	do	2	2	2	2	2	2	...	...	...	...	...	...	...	...
31	do	3	3	3	3	3	3	...	...	...	...	...	...	...	...
Jan. 1, 1903	do	3	3	*b* 7	*c* 1	3	3	...	...	...	...	...	...	...	...
2	do	3	3	*c* 2	3	3	3	...	...	...	...	...	...	...	...
3	do	3	3	*c* 2½	*e* 2½	3	3	...	...	...	...	...	...	...	...
Series II:															
Jan. 28–31, inclusive (daily quantity).	do	...	...	...	...	...	...	1	1	1	1	1	1	...	...
Feb. 1	do	...	...	...	...	...	...	2	2	*d* 0	2	2	2	...	...
2	do	...	...	...	...	...	...	2	2	0	2	2	2	...	...
3	do	...	...	...	...	...	...	2	*e* 0	0	2	*e* 0	2	...	...
4	do	...	...	...	...	...	...	2	0	0	2	0	2	...	...
5	do	...	...	...	...	...	...	3	0	0	3	0	3	...	...
6	do	...	...	...	...	...	...	3	0	0	3	0	*e* 0	...	...
7	do	...	...	...	...	...	...	3	0	0	3	0	0	...	...
8	do	...	...	...	...	...	...	3	0	0	3	0	0	...	...
9	do	...	...	...	...	...	...	4	0	0	4	0	0	...	...
10	do	...	...	...	...	...	...	4	0	0	4	0	0	...	...
Series II, supplementary period:															
Feb. 16	do	...	...	...	...	...	...	*f* 0	1	1	*g* 0	1	1	...	...
17	do	...	...	...	...	...	...	0	2	2	0	2	2	...	...
18	do	...	...	...	...	...	...	0	3	3	0	3	3	...	...
19	do	...	...	...	...	...	...	0	4	4	0	4	4	...	...
20	do	...	...	...	...	...	...	0	5	*e* 3⅓	0	*e* 3⅓	5	...	...
21	do	...	...	...	...	...	...	0	5	0	0	0	5	...	...
Series III:															
Feb. 28	In milk	1	1	1	1	1	1	...	...	...	...	...	...	...	...
Mar. 1	do	1	1	1	1	1	*c* 0	...	...	...	...	...	...	...	...
2	do	1	1	1	1	1	0	...	...	...	...	...	...	...	...
3	do	1	1	1	1	1	0	...	...	...	...	...	...	...	...

a Boric acid was administered to all subjects in Series I, II, and III, and borax to all in Series IV. In Series V, Nos. 1, 2, 3, and 12 received boric acid, Nos. 4, 5, 6, and 14 borax. In the special series boric acid was administered to both men.

b About 4 grams given subject outside of Department.

c Subject ill; quantity reduced.

d Dropped out.

e Dropped out on account of illness.

f Absent on account of illness.

g No. 10 having taken the full amount up tothe 10th, no preservative was given him in this period.

TABLE II.—*Schedule of administration of boric acid and borax*—Continued.

Date.	Method of administration.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.	No. 12.	No. 13.	No. 14.
		Grams.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Series III—Continued.															
Mar. 4 *a*	In milk	4	4	4	4	4	0	...	...	...	...	...	...	...	...
5 *a*	do	4	*b* 2	4	4	4	0	...	...	...	...	...	...	...	...
6	do	2	0	2	2	2	1	...	...	...	...	...	...	...	...
7	do	2	1	2	2	2	2	...	...	...	...	...	...	...	...
8	do	3	0	3	3	3	3	...	...	...	...	...	...	...	...
9	do	*b* 2	0	3	*b* 1 $\frac{11}{15}$	3	3	...	...	...	...	...	...	...	...
10	do	3	0	*b* 2	3	*b* 2 $\frac{1}{5}$	3	...	...	...	...	...	...	...	...
11	do	*b* 2	0	3	*b* 2	3	3	...	...	...	...	...	...	...	...
Series IV:															
Mar. 28	In meat	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	...	...
29	In capsules	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	...	...
30	In coffee	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	*c* 0	$\frac{1}{2}$	...	...
31	do	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	0	$\frac{1}{2}$	...	...
Apr. 1	do	...	...	...	...	...	...	1	1	1	1	0	*c* 0	...	...
2	do	...	...	...	...	...	...	(*d*)	1	1	1	0	0	...	...
3	do	...	...	...	...	...	...	...	1	1	1	0	0	...	...
4	In capsules	...	...	...	...	...	...	...	1	1	1	$\frac{1}{2}$	0	...	...
5	do	...	...	...	...	...	...	...	1	1	1	1	0	...	...
6	do	...	...	...	...	...	...	...	1	1	1	1	1	...	...
7	do	...	...	...	...	...	...	...	1	1	1	1	1	...	...
8	do	...	...	...	...	...	...	...	1	1	1	1	1	...	...
9	do	...	...	...	...	...	...	...	1	1	1	1	1	...	...
10	do	...	...	...	...	...	...	...	2	2	2	1	1	...	...
11	do	...	...	...	...	...	...	...	2	2	2	1	1	...	...
12	do	...	...	...	...	...	...	...	2	2	2	2	2	...	...
13	do	...	...	...	...	...	...	...	2	2	2	2	2	...	...
14	do	...	...	...	...	...	...	...	3	3	3	3	3	...	...
Series V:															
May 2 to June 20, inclusive (daily quantity). *e*	do	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	...	...	...	...	...	$\frac{1}{2}$	...	$\frac{1}{2}$
Special series:															
Mar. 9	In butter	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{6}$
10	do	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{4}$
11 and 12 (daily quantity)	do	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$
13	do	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{4}$	*c* 0
14–19, inclusive (daily quantity).	do	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$
20	do	...	...	...	...	...	...	...	...	...	...	...	...	*c* 0	$\frac{1}{2}$
21	do	...	...	...	...	...	...	...	...	...	...	...	...	0	$\frac{1}{2}$
22 and 23 (daily quantity)	do	...	...	...	...	...	...	...	...	...	...	...	...	0	*c* 0
24–26, inclusive (daily quantity).	do	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{2}$	$\frac{1}{2}$
27 and 28 (daily quantity)	do	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{4}$	$\frac{1}{4}$

29 to April 3, inclusive (daily quantity).	do													$\frac{1}{2}$	$\frac{1}{2}$
Apr. 4	In capsules.													$\frac{1}{2}$	$\frac{1}{2}$
5	do													$\frac{1}{2}$	c 0
6	do													$\frac{1}{2}$	0
7	do													$\frac{1}{2}$	$\frac{1}{2}$
8	do													$\frac{1}{2}$	$\frac{1}{2}$
9	do													$\frac{1}{4}$	$\frac{1}{2}$
10	do													c 0	$\frac{1}{2}$
11	do													0	$\frac{1}{4}$
12–23, inclusive (daily quantity).	do													0	c 0
24	do													0	$\frac{1}{4}$
25 to May 1, inclusive (daily quantity).	do													0	$\frac{1}{2}$
Total		76	$56\frac{1}{2}$	$79\frac{1}{2}$	$60\frac{7}{36}$	$76\frac{7}{16}$	$60\frac{1}{2}$	35	50	$39\frac{1}{5}$	54	$36\frac{5}{6}$	71	13	$40\frac{5}{12}$

[a] Double portion given.
[b] Subject ill; quantity reduced.
[c] Subject ill; no preservative given.
[d] Resigned from table.
[e] In Series V one-half gram of boric acid or its equivalent in borax was administered daily. No preservative was given to the following subjects on the days mentioned: No. 2, after June 11 (ill); No. 4, after May 25 (resigned); No. 5, on May 27 (ill); No. 6, on May 8 and 9 and after June 11 (ill); No. 12, on May 13 and June 16 (ill); No. 14, on May 4 and 13 and June 9 (ill).

EXCRETION OF THE BORIC ACID AND BORAX.

Whether the preservative be given in the form of boric acid or borax appears to have little effect upon the percentage thereof appearing in the urine. In Tables III to VIII are found a detailed statement of the quantity of the preservative daily given in the food, in terms of boric acid, and the amount recovered in the urine, together with a statement of the total amount taken during the series, and the percentage of the total exhibited amount recovered in the urine.

In Series I (Table III) it is seen that of 25 grams of boric acid taken by No. 1, 86.96 per cent is recovered in the urine. In the case where 1 gram is given, the first day 604.9 milligrams are recovered; on the second day, when the same amount is given, 871.3 milligrams are recovered; on the third day, when still the same amount is given, 902.8 milligrams are recovered; on the fourth day, when the maximum amount is recovered during the exhibition of 1 gram, 938.7 milligrams are recovered. It is apparent that there is a continued accumulation of boric acid in the system up to about the fourth day, when the quantities recovered in the urine remain almost constant. On the cessation of the administration of the boric acid the quantity in the urine rapidly falls. At the end of about the third or fourth day thereafter there are no longer any measurable quantities found, but traces of the preservative remain in the urine for about eight days. It may be said, then, without expressing the fact accurately for every case, that in about eight days after the cessation of the giving of large quantities of boric acid all traces of it are removed from the urine and presumably from the system. It will not be necessary to go over the data for each of the members of the table separately. They practically illustrate the principle which is outlined by the detailed data of No. 1. The largest percentage of the total exhibited amount recovered in the urine is found in the case of No. 2, namely, 88.51, and the smallest in the case of No. 5, 77.86. The average quantity excreted in the urine for the whole number under observation during the whole of the first series is 83.05 per cent.

In Table IV are given the details of the exhibition of the preservative in Series II, with the quantities recovered. As has already been intimated, there are very serious irregularities in this table due to illness. Especially are the data for Nos. 8, 9, and 11 extremely unsatisfactory. In the case of No. 9 only 3 grams are given, excluding the quantity administered in the supplementary period, and in the case of No. 11 only 8 grams. Nos. 7 and 10 are the only members of the class who receive the full amount. The percentage eliminated in the urine of No. 7 is 81.82, and of No. 10, 82.13. The average amount eliminated in the urine for the whole class is 82.85 per cent.

The data for Series III are given in Table V. The data for this series are also incomplete, and especially do they vary from the other

two tables in the quantities which are recovered in the urine, being remarkably low in the case of all the members of the class of Series III. No satisfactory explanation of this variation can be given. Had it occurred in only one instance it might have been attributable to a failure to collect the whole of the urine or to some analytical error, but, being uniformly low, these explanations are not tenable. Of the total quantity of boric acid given to all the members of the class, namely, 132.9 grams, 84.9 grams are recovered in the urine, a percentage of 63.88.

The data for Series IV are given in Table VI. We have here a return to the percentage occurring in the urine shown in Series I and II. The highest amount recovered is in the case of No. 11, namely, 89.74, and the lowest in the case of No. 8, 78.68. During this series 99.5 grams of boric acid in the form of borax is given in the food, of which 82.55 grams are recovered in the urine, or 82.96 per cent.

The quantities of boric acid recovered in the individual cases in Series V vary greatly. (See Table VII.) As has been already explained, only ½-gram quantities are given during this series of observations, but the exhibition of this quantity is extended over a period of fifty days, so that in normal cases 25 grams of boric acid are administered during this period to each of the subjects. In point of fact, however, in only two instances is this full amount taken, while in a third instance within half a gram of that amount is taken. The largest percentage recovered in any one instance is in the case of No. 4, namely, 84.42 per cent. No. 4, however, completed only about half of the period. The smallest quantity excreted is found in the case of No. 3, namely, 68.44 per cent. Of the 127 grams of boric acid administered during the whole series 95.47 are recovered in the urine, or 75.17 per cent.

Summarizing the quantity of boric acid given during the whole period of observation, including the five series (Table VIII), we find that it amounts to 607.4 grams. Of this quantity 468.69 grams are recovered in the urine, or, expressed in percentage, 77.16. In connection with this determination attention should be called to the fact that the quantitative determination of boric acid in a liquid like urine is attended with considerable difficulties, unless such a length of time be devoted to it as would render the execution of a large quantity of work impracticable under existing conditions. The methods employed are fully described in the part of this bulletin devoted to the methods of analysis, and it is believed that the data obtained, while not rigidly exact, are satisfactory for the explanation of the metabolic processes. The data show that the great burden of excreting the boric acid from the body falls upon the kidneys.

In order to determine whether boric acid was lost to any extent by perspiration, one of the assistants in the laboratory carefully extracted with water a set of flannels worn for one hour during a game of ten-

nis on a hot day. Before the game he had carefully bathed and put on a clean suit of flannels. As a result no boric acid could be detected.

Two further trials were made for a longer period of time. The men undertaking them bathed, put on clean suits of flannels, and wore them for a period of twenty-four hours. During this time they played tennis for several hours, and rode their bicycles for about an hour. The temperature was quite high and prespiration was profuse. The water used in bathing and in extracting the flannels was mixed, evaporated to dryness, and tested for boric acid. A very strong reaction for boric acid was obtained, but the amount present was not sufficient to permit its quantitative determination with certainty.

In each case 3 grams of boric acid were administered at the beginning of the experiment. It would appear that in the first experiment the time allowed was not sufficient for the elimination of a sufficient amount of boric acid to give a test. In the case of the second and third, where a positive result was obtained, it can not be expected that the result was as high as would have been the case if the subject had been receiving the preservative for a number of days. As is stated above, about eight days are required for the complete elimination of the boric acid, and the amount eliminated in the first twenty-four hours amounts only to from 30 to 60 per cent of the amount administered. Owing to the small amount of preservative employed, the large amount of water necessary to secure it, and the inevitable inaccuracies due to the incomplete extraction, the amount of boric acid indicated by such an experiment must be incomplete. Probably the greater part of the 23 per cent of the boric acid not accounted for in the urine escapes through the pores of the skin.

Attempts were also made to determine whether any of the boric acid assumed a volatile state in the system and escaped in the respiration. The well-known tendency of boric acid to pass off in certain cases in boiling water led to the supposition that it might be reduced in the system to a form in which it would be volatilized in the respiration. One of the members of the table, who had been taking 3 grams of borax a day for four days, breathed as continuously as practicable for three hours through a solution of limewater. The limewater was then tested for boric acid with a negative result. Confirmatory tests were made with the same result.

TABLE III.—*Boric acid ingested and recovered in urine during Series I.*

Date.	No. 1.		No. 2.		No. 3.		No. 4.		No. 5.		No. 6.	
	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.
	Gms.	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*
Dec. 22, 1902	1	0.6049	1	0.5582	1	0.5702	1	0.6184	1	0.5513	1	0.5029
23	1	.8713	1	.8642	1	.8029	1	.8650	1	.7932	1	.7882
24	1	.9028	1	.9341	1	.9057	1	.9132	1	.8444	1	.8517
25	1	.9387	1	.9357	1	.8743	1	.9278	1	.8873	1	.8799
26	1	.9213	1	.9412	1	.8881	1	.9311	1	.8901	1	.9009
27	2	1.1321	2	1.2411	2	1.2167	2	1.2289	2	1.4013	2	1.4098
28	2	1.6039	2	1.6245	2	1.2976	2	1.3746	2	1.6081	2	1.5878
29	2	1.7514	2	1.7489	2	1.7451	2	1.6131	2	1.5941	2	1.6047
30	2	1.7821	2	1.8018	2	1.4763	2	1.5028	2	1.6054	2	1.6457
31	3	1.9821	3	2.0011	3	1.7516	3	1.8879	3	1.8547	3	1.8019
Jan. 1, 1903	3	2.2837	3	2.2440	[a] 7	3.9124	1	1.3125	3	2.1077	3	1.9529
2	3	2.4016	3	2.4579	2	3.3233	3	1.4341	3	2.2139	3	2.2012
3	3	2.5356	3	2.4214	2.5	2.9002	2.5	1.5816	3	2.3393	3	2.1075
4	0	1.0683	0	1.6422	0	.9323	0	1.2104	0	1.5562	0	1.6960
5	0	.8545	0	.5154	0	.3702	0	.2253	0	.2271	0	.3157
6	0	.1061	0	.1176	0	.0589	0	.1114	0	Tr.	0	.0869
7	0	Tr.	0	.0790	0	.0771	0	Tr.	0	Tr.	0	.0718
8	0	Tr.	0	Tr.	0	Tr.	0	Tr.	0	Tr.	0	Tr.
9	0	Tr.	0	Tr.	0	Tr.	0	Tr.	0	0	0	0
10	0	Tr.	0	Tr.	0	0	0	Tr.	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
Total	25	21.7404	25	22.1283	27.5	23.1029	22.5	17.7381	25	19.4641	25	20.4055
Per cent recovered	......	86.96	......	88.51	......	84.02	......	78.82	......	77.86	......	81.62

[a] About 4 grams given subject outside of Department.

TABLE IV.—*Boric acid ingested and recovered in urine during Series II.*

Date.	No. 7.		No. 8.		No. 9.		No. 10.		No. 11.		No. 12.	
	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.
1903.	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*
Jan. 28	1	0.49	1	[a] 0.50	1	[a] 0.50	1	0.60	1	0.31	1	0.47
29	1	.71	1	.76	1	.66	1	.74	1	.72	1	.74
30	1	.57	1	.61	1	.51	1	.65	1	.72	1	.68
31	1	.80	1	.55	[b] 0	[a] .25	1	.64	1	.83	1	.60
Feb. 1	2	1.18	2	1.66	Absent	....	2	.86	2	1.22	2	1.08
2	2	1.88	2	1 35	...do..	....	2	1.25	2	1.52	2	1.59
3	2	1.71	0	.60	...do..	....	2	1.68	0	[a] .80	2	1.58
4	2	1.95	Absent	[a] .30	...do..	....	2	1.47	Absent	[a] .40	2	1.41
5	3	2.01	...do..	[a] .12	...do..	....	3	2.06	...do..	[a] .20	3	2.09
6	3	2.51	...do..	....	...do..	....	3	2.29	...do..	....	0	1.64
7	3	3.29	...do..	....	...do..	....	3	2.41	...do..	....	0	.63
8	3	1.85	...do..	....	...do..	....	3	2.72	...do..	....	0	.48
9	4	2.46	...do..	....	...do..	....	4	2.93	...do..	....	0	.39
10	1	2.99	...do..	....	...do..	....	4	3.03	...do..	....	0	.25
11	0	1.06	...do..	....	...do..	....	0	[a] 1.60	...do..	....	0	Tr.
12	0	.17	...do..	....	...do..	....	Absent	[a] .80	...do..	....	0	0
13	0	.22	...do..	....	...do..	....	...do..	[a] .35	...do..	....	0	0
14	0	Tr.	...do..	....	...do..	....	...do..	[a] .20	...do..	....	0	0
15	0	0	...do..	....	...do..	....	...do..	....	...do..	....	0	0
[c] 16	.....	....	1	.57	1	.41	....	....	1	.69	1	.43
17	.....	....	2	1.10	2	1.11	....	....	2	2.14	2	1.45
18	.....	....	3	1.75	3	1.73	....	....	3	1.83	3	1.73
19	.....	....	4	3.00	1	1.25	....	....	4	2.63	4	3.38
20	.....	....	5	2.60	3.33	Absent	....	....	3.33	3.14	5	3.42
21	.....	....	5	Absent	....	....	....	....	....	....	5	Ab.
Total	32	26.18	8	6.45	3	1.92	32	26.28	8	6.73	15	13.63
Per cent recovered	.....	81.82	....	80.63	....	61.00	....	82.13	....	81.13	.....	90.87

[a] Determinations not made on account of lack of sample, but the probable amount of boric acid voided has been added in order not to interrupt the continuity of the data.

[b] One gram given but not included because urine was not sampled.

[c] Figures for the supplementary period (Feb. 16–21) are not included in the total.

TABLE V.—*Boric acid ingested and recovered in urine during Series III.*

Date.	No. 1.		No. 2.		No. 3.		No. 4.		No. 5.		No. 6.	
	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.
1903.	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*
Feb. 28	1	0.06	1	0.08	1	0.12	1	0.16	1	0.13	1	0.20
Mar. 1	1	.33	1	.26	1	.44	1	.18	1	.24	0	.14
2	1	.74	1	.64	1	.71	1	.32	1	.69	0	Tr.
3	1	.73	1	.66	1	.53	1	.98	1	.74	0	0
4	4	1.78	4	1.80	4	2.24	4	1.84	4	2.56	0	0
5	4	2.60	2	1.52	4	2.06	4	2.44	4	2.66	0	0
6	2	1.72	0	.50	2	1.64	2	1.36	2	1.24	1	.38
7	2	1.05	1	.05	2	1.25	2	1.27	2	.89	2	1.10
8	3	1.54	0	.09	3	2.07	3	1.93	3	2.04	3	1.79
9	2	2.00	0	Tr.	3	2.06	1.7	1.69	3	2.25	3	2.33
10	3	1.70	0	0	2	1.47	3	1.80	2.2	1.95	3	2.29
11	2	1.59	0	0	3	1.69	2	1.62	3	1.74	3	2.03
12	0	.60	0	0	0	.64	0	.60	0	.53	0	.78
13	0	.26	0	0	0	.22	0	.20	0	.14	0	.23
14	0	Tr.	0	0	0	Tr.	0	Tr.	0	Tr.	0	Tr.
15	0	0	0	0	0	Tr.	0	Tr.	0	0	0	Tr.
16	0	0	0	0	0	0	0	0	0	0	0	0
Total	26	16.70	11	5.60	27	17.14	25.7	16.39	27.2	17.80	16	11.27
Per cent recovered	......	64.24	......	50.91	......	63.48	......	63.78	......	65.44	......	70.25

TABLE VI.—*Borax ingested and recovered in urine during Series IV.*

[Expressed in terms of boric acid.]

Date.	No. 7.		No. 8.		No. 9.		No. 10.		No. 11.		No. 12.	
	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.
1903.	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*
Mar. 28	0.5	0.17	0.5	0.14	0.5	0.16	0.5	0.27	0.5	0.20	0.5	0.16
29	.5	.33	.5	.31	.5	.34	.5	.29	.5	.43	.5	.32
30	.5	.62	.5	.33	.5	.46	.5	.38	0	.32	.5	.58
31	.5	.58	.5	.36	.5	.44	.5	.35	0	.08	.5	[a] .30
Apr. 1	1.0	.58	1	.64	1	.70	1	.56	Absent	....	0	[a] .12
2	Absent	[a] .30	1	.71	1	.79	1	.53	...do...	....	Absent	......
3	...do...	[a] .10	1	.83	1	.91	1	.97	...do...	....	...do...	......
4	...do...	....	1	.76	1	.85	1	.74	0.5	.41	...do...	......
5	...do...	....	1	.64	1	.76	1	.80	1	.57	...do...	......
6	...do...	....	1	.74	1	.84	1	.80	1	.74	1	.57
7	...do...	....	1	.71	1	.87	1	.92	1	.84	1	.76
8	...do...	....	1	.84	1	.79	1	.74	1	.86	1	.84
9	...do...	....	1	.80	1	.91	1	.80	1	.91	1	.90
10	...do...	....	2	1.21	2	1.17	2	1.14	1	.96	1	.94
11	...do...	....	2	1.78	2	1.58	2	1.62	1	.92	1	.72
12	...do...	....	2	1.61	2	1.80	2	1.75	2	1.23	2	1.36
13	...do...	....	2	1.29	2	1.64	2	1.67	2	1.71	2	1.70
14	...do...	....	3	1.81	3	2.22	3	1.61	3	2.14	3	2.32
15	...do...	....	0	1.18	0	1.57	0	.65	0	.98	0	.64
16	...do...	....	0	.32	0	.42	0	.36	0	.27	0	.24
17	...do...	....	0	.24	0	.21	0	.34	0	.28	0	.23
18	...do...	....	0	.06	0	.08	0	.08	0	.06	0	.07
19	...do...	....	0	Tr.	0	Tr.	0	Tr.	0	Tr.	0	Tr.
20	...do...	....	0	0	0	0	0	0	0	0	0	0
Total	3	2.68	22	17.31	22	19.51	22	17.37	15.5	13.91	15	12.77
Per cent recovered	....	89.33	.....	78.68	.....	88.69	.....	78.96	....	89.74	....	85.15

[a] Determinations not made on account of lack of sample, but the probable amount of boric acid voided has been added in order not to interrupt the continuity of the data.

TABLE VII.—*Boric acid and borax ingested and recovered in urine during Series V.*

[Expressed in terms of boric acid.]

Date.	No. 1.		No. 2.		No. 3.		No. 4.		No. 5.		No. 6.	
	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.	Dose.	Amount recovered.
1903.	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*	*Gms.*
May 2	0.5	0.38	0.5	0.40	0.5	0.31	0.5	0.35	0.5	0.20	0.5	0.29
3	.5	.58	.5	.44	.5	.30	.5	.40	.5	.31	.5	.40
4	.5	.35	.5	.31	.5	Lost.	.5	.40	.5	.34	.5	.38
5	.5	.33	.5	.29	.5	.22	.5	.36	.5	.29	.5	.35
6	.5	.40	.5	.45	.5	.44	.5	.35	.5	.47	.5	.43
7	.5	.25	.5	.27	.5	.29	.5	.42	.5	.31	.5	.34
8	.5	.34	.5	.38	.5	.30	.5	.33	.5	.41	0	.12
9	.5	.31	.5	.47	.5	.29	.5	.51	.5	.38	0	Tr.
10	.5	.28	.5	.26	.5	.44	.5	.46	.5	.38	.5	.22
11	.5	.34	.5	.49	.5	.33	.5	.44	.5	.35	.5	.48
12	.5	.38	.5	.41	.5	.33	.5	.48	.5	.38	.5	.40
13	.5	.43	.5	.37	.5	.29	.5	.49	.5	.43	.5	.52
14	.5	.43	.5	.54	.5	.37	.5	.46	.5	.44	.5	.40
15	.5	.39	.5	.30	.5	.34	.5	.34	.5	.42	.5	.34
16	.5	.39	.5	.39	.5	.35	.5	.40	.5	.44	.5	.48
17	.5	.33	.5	.27	.5	.34	.5	.33	.5	.38	.5	.42
18	.5	.34	.5	.35	.5	.32	.5	.44	.5	.33	.5	.43
19	.5	.37	.5	.32	.5	.34	.5	.42	.5	.38	.5	.47
20	.5	.29	.5	.31	.5	.23	.5	.39	.5	.39	.5	.38
21	.5	.34	.5	.31	.5	.35	.5	.39	.5	.39	.5	.39
22	.5	.32	.5	.32	.5	.33	.5	.39	.5	.35	.5	.44
23	.5	.32	.5	.30	.5	.33	.5	.40	.5	.45	.5	.41
24	.5	.32	.5	.28	.5	.33	.5	.44	.5	.37	.5	.48
25	.5	.32	.5	.29	.5	.30	.5	.42	.5	.39	.5	.38
26	.5	.32	.5	.33	.5	.34	Absent	[a].22	.5	.43	.5	.40
27	.5	.38	.5	.41	.5	.32	...do...	[a].10	0	.06	.5	.46
28	.5	.35	.5	.29	.5	.41	...do...	......	.5	.26	.5	.41
29	.5	.35	.5	.28	.5	.29	...do...	......	.5	.34	.5	.47
30	.5	.39	.5	.37	.5	.34	...do...	......	.5	.46	.5	.50
31	.5	.36	.5	.31	.5	.39	...do...	......	.5	.43	.5	.35
June 1	.5	.34	.5	.35	.5	.36	...do...	......	.5	.45	.5	.38
2	.5	.41	.5	.35	.5	.33	...do...	......	.5	.38	.5	.34
3	.5	.32	.5	.31	.5	.30	...do...	......	.5	.33	.5	.32
4	.5	.29	.5	.33	.5	.37	...do...	......	.5	.40	.5	.41
5	.5	.34	.5	.37	.5	.27	...do...	......	.5	.38	.5	.23
6	.5	.42	.5	.37	.5	.40	...do...	......	.5	.42	.5	.41
7	.5	.36	.5	.40	.5	.37	...do...	......	.5	.39	.5	.32
8	.5	.42	.5	.39	.5	.39	...do...	......	.5	.53	.5	.32
9	.5	.32	.5	.40	.5	.28	...do...	......	.5	.33	.5	.34
10	.5	.36	.5	.37	.5	.36	...do...	......	.5	.50	.5	.49
11	.5	.36	.5	.38	.5	.39	...do...	......	.5	.10	.5	.43
12	.5	.45	0	.13	.5	.40	...do...	......	.5	.43	.5	.44
13	.5	.33	0	Tr.	.5	.49	...do...	......	.5	.35	0	.19
14	.5	.31	0	0	.5	.39	...do...	......	.5	.31	0	Tr.
15	.5	.37	0	0	.5	.46	...do...	......	.5	.34	0	Tr.
16	.5	.46	0	0	.5	.36	...do...	......	.5	.33	0	0
17	.5	.36	0	0	.5	.27	...do...	......	.5	.38	0	0
18	.5	.34	0	0	.5	.31	...do...	......	.5	.37	0	0
19	.5	.35	0	0	.5	.32	...do...	......	.5	.30	0	0
20	.5	.38	0	0	.5	.27	...do...	......	.5	.42	0	0
21	0	.11	0	0	0	.09	...do...	......	0	.20	0	0
22	0	Tr.	0	0	0	Tr.	...do...	......	0	Tr.	0	0
23	0	Tr.	0	0	0	Tr.	...do...	......	0	Tr.	0	0
24	0	0	0	0	0	0	...do...	......	0	0	0	0
Total	25	18.11	20.5	11.56	25	17.11	12	10.13	21.5	18.90	20	16.66
Per cent recovered	......	72.41	......	71.03	......	68.41	......	81.42	......	77.14	......	83.30

[a] Determinations not made on account of lack of sample, but the probable amount of boric acid voided has been added in order not to interrupt the continuity of the data.

TABLE VIII.—*Boric acid and borax ingested and recovered in the urine during Series I–V, inclusive.*

[Expressed in terms of boric acid.]

Data.	Series I.	Series II.	Series III.	Series IV.	Series V.	Total.
	Grams.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Amount given	150.00	98.00	132.90	99.50	127.00	607.40
Amount recovered	124.58	81.19	84.90	82.55	95.47	468.69
Per cent recovered	83.05	82.85	63.88	82.96	75.17	77.16

MEDICAL HISTORY.

It is important in the study of the problems under discussion to secure, as nearly as possible, the complete medical history of each of the individual subjects. This was not officially arranged for, however, at the very beginning of the work, and the medical history of each case for some time was secured without the supervision of the representative of the Public Health and Marine-Hospital Service who afterwards took charge of this part of the work.

PHYSICAL AND MEDICAL EXAMINATIONS.

The results of the physical and medical examination of each of the members of the class, made just before the beginning of the fore period of Series I, are summarized in Table IX, the examination being conducted by Dr. Edwin B. Behrends, with the collaboration of Dr. Andrew Stewart, to whom thanks are due for the valuable and voluntary services rendered. A summary of all the analyses of urine is given in Table X.

TABLE IX.—*Preliminary physical examination of twelve men, each designated by number and initials.*

FIRST SET OF MEN.

Observation.	No. 1—J. N.	No. 2—F. C. W.	No. 3—W. S. O.
Age	29	24	21.
Height	5 feet 10½ inches	5 feet 10½ inches	5 feet 5¼ inches.
Weight (kilograms)	71.62	71.89	55.05.
Family history	Good	In immediate family, good; consumption on mother's side.	Good.
Chest (inches):			
Stripped	35½	35	32.
Full inspiration	38	37½	34½.
Full expiration	34	33½	30.
Girth of abdomen	32	30	28.
Figure	Good	Good	Good.
Has had:			
Severe headaches	Yes	No	Yes.
Other nervous trouble	No	No	No.
Body eruptions	None	None	Tenia versicola.
Subject to:			
Coughs	No	No	No.
Expectorations	No	No	No.
Palpitations	No	No	No.
Difficult breathing	No	No	No.
Heart	Normal	Normal sounds, but somewhat rapid.	Normal, but rapid.
Pulse (per minute):			
Sitting	64	88	100.
Standing	68	92	104.

TABLE IX.—*Preliminary physical examination of twelve men, each designated by number and initials*—Continued.

FIRST SET OF MEN—Continued.

Observation.	No. 1—J. N.	No. 2—F. C. W.	No. 3—W. S. O.
Character of pulse	Good	Good, but somewhat weak.	Normal, but rapid.
Lungs	Normal	Normal	Normal.
Respirations (per minute).	18	18	24.
Temperature, under tongue (Fahrenheit).	98.2°	98°	99.2°.
Disease of:			
Stomach	No symptoms	No symptoms	No symptoms.
Intestines	No symptoms (see below)	No symptoms	No symptoms.
Urinary organs	See urinalysis	See urinalysis	See urinalysis.
Exercise	Moderate now, but football and baseball in summer.	Moderate	Moderate.
Remarks	Contracted severe and protracted bowel trouble (diarrhea) in Volunteer Army during Spanish-American War. Of late has been feeling well.	Has had very severe attack of erysipelas, complicated with gangrene, leaving a very extensive scar on the chest, still red and threatening to break down.	

Observation.	No. 4—W. L. D.	No. 5—R. V. F.	No. 6—L. M. S.
Age	23	21	19.
Height	5 feet $8\frac{1}{2}$ inches	5 feet $6\frac{3}{4}$ inches	5 feet $7\frac{1}{4}$ inches.
Weight (kilograms)	57.57	52.63	61.60.
Family history	Good	Good	Asthmatic.
Chest (inches):			
Stripped	$32\frac{1}{4}$	$32\frac{1}{4}$	$34\frac{1}{4}$.
Full inspiration	34	$35\frac{1}{2}$	$37\frac{1}{4}$.
Full expiration	31	31	33.
Girth of abdomen	36	27	$27\frac{1}{2}$.
Figure	Poor	Athletic	Good.
Has had:			
Severe headaches	No	No	Yes.
Other nervous trouble.	No	No	No.
Body eruptions	None	None	None.
Subject to:			
Coughs	No	No	No.
Expectorations	No	No	No.
Palpitations	No	No	Yes.
Difficult breathing	No	No	Subject to asthma.
Heart	Normal	Normal	Rapid, but normal.
Pulse (per minute):			
Sitting	72	88	84.
Standing	81	92	92.
Character of pulse	Good	Good	Rapid, but good.
Lungs	Normal	Dullness in upper part of right lung, with sharp expiration.	Normal.
Respirations (per minute).	16	20	24.
Temperature, under tongue (Fahrenheit).	98.2°	99°	100°.
Disease of:			
Stomach	No symptoms	No symptoms	No symptoms.
Intestines	No symptoms	No symptoms	No symptoms.
Urinary organs	See urinalysis	See urinalysis	See urinalysis.
Exercise	Moderate	Gymnasium three times a week.	None.
Remarks		Has a cold with slight cough.	Has simple goitre; has smoked to excess and been feeling badly for a day.

TABLE IX.—*Preliminary physical examination of twelve men, each designated by number and initials*—Continued.

SECOND SET OF MEN.

Observation.	No. 7—E. R. M.	No. 8—J. H. E.	No. 9—E. B. D.
Age	23	21	18.
Height	5 feet 7 inches	5 feet 10¾ inches	5 feet 5½ inches.
Weight (kilograms)	61.73	69.55	56.36.
Family history	Good	Good	Good.
Chest (inches):			
Stripped	32	34½	31⅛.
Full inspiration	35	37	32½.
Full expiration	31	33	29½.
Girth of abdomen	27	28	27.
Figure	Good	Excellent	Not robust.
Has had:			
Severe headaches	No	No	Yes.
Other nervous trouble	No, except from tobacco	No	No.
Body eruptions	None	None	None.
Subject to:			
Coughs	No	No	No.
Expectorations	No	No	No.
Palpitations	No	No	No.
Difficult breathing	No	No	No.
Heart	Rapid, but normal	Normal	Normal.
Pulse (per minute):			
Sitting	80	68	72.
Standing	92	72	76.
Character of pulse	Slightly irregular	Good	Good.
Lungs	Normal	Normal	In upper posterior portion of both lungs, small, fine râles.
Respirations (per minute)	16	20	20.
Temperature, under tongue (Fahrenheit)	98.8°	98.4°	98.2°.
Disease of:			
Stomach	Occasional indigestion	No symptoms	No symptoms.
Intestines	None	No symptoms	No symptoms.
Urinary organs	See urinalysis	See urinalysis	See urinalysis.
Exercise	Moderate now; summer sports.	Moderate now; in summer, athletics.	Freely; belongs to D. C. N. G.
Remarks	Has smoked and chewed to excess.	Has used tobacco freely.	Has slight lateral scoliosis.

Observation.	No. 10—W. J. J.	No. 11—J. S. C.	No. 12—B. J. T.
Age	22	24	28.
Height	5 feet 11 inches	5 feet 8 inches	5 feet 9 inches.
Weight (kilograms)	65.45	69.09	67.28.
Family history	Good	Good	
Chest (inches):			
Stripped	34	35½	
Full inspiration	37	38	37.
Full expiration	33	33½	33.
Girth of abdomen	30½	30	30.
Figure	Good	Good	Good.
Has had:			
Severe headaches	No	No	No.
Other nervous trouble	No	No	No.
Body eruptions	None	None	None.
Subject to:			
Coughs	No	No	No.
Expectorations	No	No	No.
Palpitations	No	No	No.
Difficult breathing	No	No	No.
Heart	Normal, but rapid	Normal	Normal.
Pulse (per minute):			
Sitting	96	76	88.
Standing	108	88	92.
Character of pulse	Normal, but rapid	Good	Good.
Lungs	Normal	Normal	Normal.
Respirations (per minute)	22	20	
Temperature, under tongue (Fahrenheit)	99.4°	98°	98.2°.
Disease of:			
Stomach	No symptoms	No symptoms	No symptoms.
Intestines	No symptoms	No symptoms	No symptoms.
Urinary organs	See urinalysis	See urinalysis	See urinalysis.
Exercise	Moderate; summer, baseball, etc.	Walks a good deal and plays ball frequently in summer.	
Remarks	Has used tobacco to excess up to last month or so.		

TABLE X.—*Urinalysis for six men, made by Dr. Andrew Stewart December 14, 1902.*

Observation.	No. 1—J. N.	No. 2—F. C. W.	No. 3—W. S. O.
Reaction	Strongly acid	Acid	Acid.
Specific gravity [a]	1.0347	1.031	1.026.
Albumin	None	None	None.
Sugar	None	None	None.
Bile	None	None	None.
Microscopic examination.			
Inorganic sediment:			
Uric-acid crystals	None	None	None.
Urates	None	None	None.
Oxalate-of-lime crystals.	None	None	None.
Phosphates	None	None	Amorphous and crystalline calcium, extremely numerous.
Organic sediment:			
Epithelial cells—			
Round	Very few	Very few	None.
Flat	Very few	Very few	Very few.
Caudate	None	Very few	None.
Leucocytes	Few	Very few	Very few.
Red blood corpuscles	None		None.
Casts—			
Hyaline	Extremely few	None	None.
Finely granular	None	None	None.
Coarsely granular	None	None	None.
Epithelial	None	None	None.
Other forms	None	None	None.
Mucous cylindroids	Few; strands, numerous	Few	Few.

Observation.	No. 4—W. L. D.	No. 5—R. V. F.	No. 6—L. M. S.
Reaction	Strongly acid	Acid	Acid.
Specific gravity [a]	1.025	1.020	1.032.
Albumin	A trace	Very small quantity	Small quantity.
Sugar	None	None	None.
Bile	None	None	None.
Microscopic examination.			
Inorganic sediment:			
Uric-acid crystals	None	None	None.
Urates	None	None	None.
Oxalate-of-lime crystals.	Few	None	Very few.
Phosphates	Amorphous and crystalline calcium, numerous.	None	None.
Organic sediment:			
Epithelial cells—			
Round	Few	Very few	Very few.
Flat	Few	Very few	Very few.
Caudate	None	None	None.
Leucocytes	Few	Few	Few.
Red blood corpuscles	None	Few	None.
Casts—			
Hyaline	Numerous	Few	None.
Finely granular	Very few	Few	None.
Coarsely granular	Very few	None	None.
Epithelial	None	Very few	None.
Other forms	None	Pus, few; blood, few	None.
Mucous cylindroids	Fairly numerous	Few	With strands, very numerous.
Remarks			This urine was of a red color, containing an excess of urates.

[a] Corrections made in each case as follows: No. 1, for 63° F.; No. 2, 92° F.; No. 3, 84° F.; No. 4, 78° F.; No. 5, 66° F.; No. 6, 91° F.

The advisability of a constant medical supervision of the subjects of the experiment resulted, as has already been stated, in the detail by authority of the Secretary of the Treasury, at the request of the Secretary of Agriculture, of Dr. H. D. Geddings, from the Public Health and Marine-Hospital Service, by Surgeon-General Wyman, in charge of that service. An inspection of the physical condition of each one of the subjects was made once a week by Doctor Geddings, and, in case of illness, special examinations were conducted on intermediate dates. The data obtained by Doctor Geddings have been by him consolidated and reduced to a short medical history of each of the subjects while under his supervision. These data are as follows:

No. 1—J. N., age 29.

Preliminary observations:
Heart—Sounds normal; rate very slow.
Lungs—Normal.
Previous indisposition—Indigestion and diarrhea during Spanish-American war.
Periodical observations:
Feb. 26. No deviation from normal.
Mar. 6. Some diarrhea in two different days; otherwise feels well.
12. Slight headache for past two days; appetite impaired for past twenty-four hours; no diarrhea.
19. Has regained normal condition.
Apr. 2. Has had an excess of diarrheal trouble in past three or four days; suggested taking of bismuth tablet No. 1.
9. Has improved; diarrhea relieved.
23. Diarrhea has given no trouble; is in his normal condition.
30. Is feeling well.
May 7. Is feeling well; normal.
15. Is feeling very well.

No. 2—F. C. W., age 24.

Preliminary observations:
Heart—Normal.
Lungs—Normal.
Previous indisposition—Erysipelas; recent cicatrices on chest.
Periodical observations:
Feb. 26. No deviation from normal.
Mar. 6. Symptoms are those of a mild attack of grippe; better than yesterday.
12. Normal.
19. Better; has regained normal condition.
Apr. 2. Continues doing well.
9. Normal.
23. Seems in thoroughly normal condition.
30. Is feeling all right.
May 7. Feeling well.
15. Feeling well.

No. 3—W. S. O., age 21.

Preliminary observations:
Heart—Normal; apex beat slightly displaced outward; forcible.
Lungs—Normal.
Physical condition—Robust.

Periodical observations:

Feb. 26. Has pains in stomach after meals; relieved in about fifteen minutes.
Mar. 6. Feeling well.
12. Feeling well.
19. Has tendency to headache.
Apr. 23. Is feeling in thoroughly normal condition.
30. Is feeling well.
May 7. Is feeling very well.
15. Is feeling well.

No. 5—R. V. F., age 21.[a]

Preliminary observations:

Heart—Normal.

Lungs—Slight bronchitis and conduction of vocal resonance over left lung; some mucous râles.

Previous indisposition—Febrile attack January 24 to February 18.

Periodical observations:

Feb. 26. Improving; cough is getting better.
Mar. 6. Improving.
12. Physical condition is improved; bronchitis has disappeared; auscultation and percussion normal; headache absent for past four days; bowels are normal.
19. Improving; gaining weight; cough better.
Apr. 2. Had febrile attack (103° F.) twelve days ago; no recurrence since; has troublesome cough; throat sore.
4. Examined throat to-day; general catarrhal laryngitis with pharyngeal involvement; prescribed gargle.
9. Throat has improved; cough is better; has slightly lost weight; appetite is poor.
23. No improvement; recommended that he be dropped from experimental observation.

No. 6—L. M. S., age 19.

Preliminary observations:

Heart—Normal; apex beat forcible and localized.

Lungs—Normal.

Physical condition—Very good.

No recent indisposition.

Periodical observations:

Feb. 26. No deviation from normal.
28. Malarial attack; headache; fever; sweating.
Mar. 6. Has recuperated.
12. Has had frontal headache for past four days, severe and continuous; some abdominal pains, always relieved by going to stool; complains of loss of appetite; weight has generally increased for past ten days.
19. Has improved; feels better; has temperature to-day 99.2° F.
Apr. 23. Has decidedly improved; is in full normal condition.
30. Is feeling well.
May 15. Has had one severe headache during past few weeks, lasting about two days.

[a] Withdrew at end of Series I; March 9 entered into special series of experiments, in which he is known as No. 13.

No. 7—E. R. M.

Preliminary observations:

Heart—Normal; apex beat forcible.

Lungs—Remains of slight bronchitis; no dullness; percussion note normal; no derangement of bowels; one attack of nausea.

Recent indisposition—Influenza.

Physical condition—About normal.

No. 8—J. H. E., age 21.

Preliminary observations:

Heart—Normal.

Lungs—Normal; slightly increased vocal resonance in left side.

Previous indisposition—Recent gastro-intestinal disturbance.

Physical condition—Good.

Periodical observations:

Apr. 2. Good general condition.

23. Good general condition; no change for the worse.

No. 9—E. B. D., age 18.[a]

Preliminary observations, February 19:

Heart—Normal; apex beat normal and well localized.

Lungs—Respiration roughened; mucous râles; vesicular murmur normal; percussion tone normal and equal.

Previous indisposition—Influenza.

Physical condition—Slightly below par.

Periodical observations:

Feb. 26. Has taken another cold; feels depressed; sense of lassitude.

Mar. 6. Absent.

12. Has been absent at home in Virginia; has improved physically. Bronchitis relieved; auscultation and percussion normal; bowels regular; no headache since last examination.

19. Has improved; gaining weight; cough has disappeared.

Apr. 2. Has continued to improve.

9. Is improving; has always had a tendency to headaches, and has had two in past week.

23. Two headaches in past two weeks; hemicrania. On the whole his physical condition has much improved since March 12, 1903.

30. Is feeling well.

May 7. Is feeling well.

15. Had a severe headache commencing May 12, evening, and slight chill May 13, morning.

No. 10—W. J. J., age 22.

Preliminary observations:

Heart—Normal; pulse slightly rapid.

Lungs—Normal.

Previous indisposition—Slight catarrhal attack.

Periodical observations:

Apr. 2. Resumed Saturday last; had slight gastric pain yesterday, which soon passed off.

9. Has slight neuralgic pain of very transitory nature, lasting only a fraction of a second.

23. Is feeling very well; physical condition is good.

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[a] Withdrew February 1; March 9 entered into special series of experiments, in which he is known as No. 14.

No. 11—J. S. C., age 24.

Preliminary observations:
  Heart—Normal.
  Lungs—Normal.
Periodical observations:
  Apr. 9. Has regained normal condition.

No. 12—B. J. T., age 28.

Preliminary observations:
  Heart—Normal.
  Lungs—Normal.
Periodical observations:
  Apr. 2. Has had nausea and vomiting on Saturday and again on Tuesday.
  May 15. Is feeling very well.

No. 4—E. C. S., age 24.[a]

Preliminary observations, February 26:
  Heart—Normal.
  Lungs—Normal.
Periodical observations:
  Mar. 6. Has slight headache; some diarrhea during early part of week, bowels now normal.
  8. Vision examined; is normal for reading without glasses; headaches are constant; feeling of distress in abdomen for at least one hour after eating.
  11. Headaches are better; slight pain in vertex; abdominal sensations about the same.
  12. About same.
  19. Feels better; has lost approximately 1 kilo.
  Apr. 23. Seems thoroughly well and hearty.
  30. Is feeling thoroughly well.
  May 7. Is feeling thoroughly well.
  15. Is feeling very well.

No. 5—H. C. G., age 25.[b]

Preliminary observations:
  Heart—Normal.
  Lungs—Normal.
  Previous indisposition—Inflammatory rheumatism in 1892.
Periodical observations:
  Feb. 26. Condition normal.
  Mar. 6. Headache March 3, otherwise all right; somewhat constipated.
  12. About the same; constipation exaggerated.
  19. Normal; still a little constipated.
  Apr. 23. Constipation has been relieved (fruit); in good normal condition.
  30. Has some headache; bowels are slightly constipated.
  May 7. Is feeling well.
  15. Is feeling very well.

[a] Took the place and number of W. L. D., who withdrew at end of Series I.
[b] Took the place and number of R. V. F.

No. 9—A. G., age 27.[a]

Preliminary observations, April 2:
  Heart—Normal; action slow.
  Lungs—Slight bronchitis.
Periodical observations:
  Apr. 9. Condition improved and now perfectly normal.
  23. Condition thoroughly normal.

DAILY MEDICAL NOTES.

The medical data summarized above may be supplemented by the notes required to be kept by each of the members of the table showing the temperature of the body sub lingua, the number of pulsations per minute, the number and consistence of the stools, and the occurrence of any abnormal symptoms.

The following data are taken from the daily sheets of each of the members of the table:

SERIES I.

No. 1—J. N.

The first complete observation of the temperature was made on the second day of the fore period, namely, December 9. On this date two observations were made, before and after dinner, and the temperature was found to be 98.4° and 98.2° F., respectively; pulsations per minute, before and after dinner, 78 and 67; no abnormal symptoms. There is no abnormal variation in the temperature or other vital data during the continuance of the fore period, including December 21, and no observation in regard to the character of the feces during this period. Neither is there any abnormal variation during the fore period in the consistence of the feces. On the last day of the period, however, the feces were marked as somewhat more soft than usual.

The first day of the preservative period, namely, December 22, the recorded temperatures before and after dinner are the same, 98.3° F., and the pulsations per minute 62 and 60. On the 24th there is a little abnormality in the temperature, the thermometer registering 97.6° and 97.7° F. It is noted in this case that No. 1 was out of doors during the afternoon, and it was quite cold. The effect of the exercise is also seen in the higher pulsation, which is 96 before dinner and 68 after. On the 25th the temperature rises after dinner to 99.1° F., the pulsations remaining normal at 70, and the feces are reported as very soft. The temperature is again above normal on the 29th, reaching 99.1° F., and the feces soft. On December 31 there were two movements of the bowels, the feces of the first being recorded as soft, and in the second movement as very soft, but there is no further indication of diarrhea, and the temperature and pulsation are normal. No

[a] Took the place and number of E. B. D.

further abnormality in the vital data are exhibited during the preservative period.

In the after period, extending from January 5 to January 13, inclusive, the following observations were made: On January 4 there is a slight rise in temperature noticed, the recorded data being 98.8° and 99° F. There is a slight rise of temperature noted at the observation taken before dinner on January 8, which is accounted for by a footnote stating that some exercise had been taken a quarter of an hour before the observation was made. On January 11 two evacuations of the bowels were noted, both of which are recorded as soft. No further departures from normal conditions are noted in this case during the after period.

No. 2—F. C. W.

The temperature of the body of No. 2 recorded December 8 is considerably below the normal, being 97.7° and 97.4° before and after dinner; the pulsations are recorded as 82 and 81 per minute. The probabilities are that some slight mistake was made in the recording of the temperature, as this abnormality does not manifest itself on other days of the fore period, during which the temperatures average about 98.2° F. For instance, on the 10th of December the recorded observations are 98.2° and 98.2° F. before and after dinner, and the pulsations 82 and 81 before and after dinner. The highest temperature recorded during the fore period is 98.5° F. on December 11. There are no abnormal symptoms of any kind developing during the fore period except now and then an increase in the rate of pulsation, which may have been induced simply by walking somewhat rapidly immediately before the pulsations were recorded. There are no abnormal variations in the number of times of voiding the feces, nor in any other of the vital data observed during the fore period.

The first day of the preservative period, namely, December 22, before and after dinner the recorded temperatures are 98.6° and 98.4° F., and the pulsations 80 and 84. A few abnormalities are observed during the preservative period in the vital data recorded. There is an apparent depression of the pulsations on the 2d of January, where, in the observation before dinner, the number of pulsations has fallen to 64 and the recorded temperature at the same time is 97.9° F. This condition seems to be only temporary, however, and not traceable to any effect of the preservative, since on the following day the temperatures are again about normal, namely, 98.3° and 98.1° F., and the pulsations 80 and 84. No other abnormalities are observed during the preservative period.

During the after period the observed vital data remain practically constant. There is a slight depression of the pulsation on the 6th of January to 67 beats per minute, the temperature remaining normal.

There is a slight increase in the temperature on the 7th of January, rising to 98.8° and 98.4° F., respectively, and the pulsations to 87 and 78. There is a considerable depression in the pulsation observed on the 11th of January, it falling to 57 per minute, while the recorded temperature is 57.8° F. The recorded temperatures before and after dinner on the last day of the after period, January 13, are 98.2° and 97.7° F., respectively, while the rates of pulsation are 68 and 64. None of these departures from the standard, however, can be considered of sufficient magnitude or persistence to be recorded as distinctive or abnormal manifestations.

No. 3—W. S. O.

The recorded observations of the vital phenomena of No. 3 on December 9, the second day of the fore period, are: Temperatures 98.2° and 98.2° F. and pulsations 70 and 76, before and after dinner, respectively. The first notable variation from the normal in the case of No. 3 is found on December 13, when the recorded temperature after dinner is 99.1° F. and the pulsations 90. The slight increase in temperature persisted also on the 14th, the recorded data being 98.9° and 98.2° F. and the pulsations 80 and 98, respectively. A considerable febrile excitement is noticed on the 15th, the recorded temperatures being 99.2° and 99.1° F. and the pulsations 105 and 100, respectively. This slight febrile excitement continues also during the 16th and 17th, but disappears on the 18th. On the 19th, however, there is again a slight increase in temperature, the recorded observations being 99° and 99.3° F. There is no increase, however, in the rate of pulsation. The temperature and pulsation are again normal on the 20th. On the last day of the fore period, December 21, the recorded temperatures are 98.6° and 99° F., respectively, and the pulsations 66 and 87. During a part of this period, therefore, No. 3 may be said to have exhibited a very slight febrile excitement.

On the first day of the preservative period the recorded temperatures are 98.8° and 99° F. and the pulsations 72 and 84, respectively. A rise of temperature is noted after dinner on the 24th, when the temperature is 99.5° F. and the pulsation 102. Before dinner, however, both temperature and pulsation are normal, namely, 98.7° F. and 80, respectively. Slight increases of temperature are also noted after dinner on the 25th, 26th, and 27th. There is an increase in temperature on the 28th, the two observations being recorded as 99.1° and 99.4° F., respectively. This excitement had partially passed away on the following day. It continued, on the 30th, 31st, and the 1st of January, the highest temperature recorded, however, being only 99.3° F. On January 2 there is a partial return to the normal condition. On the last day of the preservative period the recorded temperatures are 98.8° and 99° F. and the pulsations 63 and 90, respectively.

During the administration of the boric acid, therefore, it is seen that there is a slight febrile excitement persisting most of the time, but as this is the case also in the fore period it does not seem to be attributable to the preservative employed.

On the first day of the after period the recorded temperatures are 99.2° and 99.1° F., and the patient is suffering somewhat from headache and general malaise. These symptoms have nearly all passed away on January 5, the recorded temperatures being 98.8° and 99° F., respectively, and the pulsations 60 and 84. Normal conditions seem to be completely restored on the 6th and continue throughout the rest of the after period. The recorded observations on the 13th, the last day of the after period, are temperatures 98.2° and 98.5° F., pulsations 62 and 78, respectively. At no time during the entire series, either in the fore, preservative, or after period, is there any tendency to diarrhea or to abnormal consistence on the part of the urine. The only symptom which seems to be attributable directly to the effect of the boric acid is the development of the headache just at the end of the preservative period.

No. 4—W. L. D.

The recorded observations on the 9th, the second day of the fore period, are temperature 98.3° and 98.3° F. and pulsations 80 and 80, respectively. All the vital operations appeared to be, as recorded, perfectly normal. On the 13th there is a slight rise in temperature noted, the observations being 98.7° and 98.7° F. and the pulsations 82 and 82, respectively. This slight increase continues throughout the rest of the fore period, but as it is not a decided variation from the normal it is of but little significance. On the last day of the fore period, namely, December 21, the recorded observations are temperature 98.5° and 98.5° F. and pulsations 90 and 92, respectively.

On the first day of the preservative period the recorded observations are temperature 98.5° and 98.5° F. and the pulsations 72 and 82, respectively. The data of the vital records show that all of the functions of the body are conducted in a perfectly normal way. A slight fall of temperature is noted on the 26th and 27th, in which all four observations are recorded as 98° F., being slightly below the normal. This is only temporary, however, as on the succeeding days the normal temperatures are again recorded. On January 1 No. 4 awoke at 3.30 a. m. with a severe headache. He ate breakfast with an effort, was sick with headache and nausea for the remainder of the day, and ate no lunch. At about 4 p. m. his head became hot, his face breaking out with a red rash, and the arms and chest with a similar affection. Much itching about the arms and chest was experienced. The symptoms experienced were recorded as similar to those accompanying a slight attack of indigestion during the preceding September. For

several days preceding January 1 No. 4 felt that his head was not clear, and on each morning on waking rather early he had more or less headache. The symptoms in the case of No. 4 may have been due to the change in diet on the hygienic table, the ration containing rather more meat than he has ordinarily eaten. The appearance of the rash, itching, and other cuticular symptoms is incident to the disturbance of the digestion and it seems rather clear in this case that the disturbance is caused directly by the administration of the preservative. The temperature was not taken during the severest period of suffering in the afternoon, but the pulse was counted and found to be high on the 1st of January, namely, 98 beats per minute. The recorded temperatures, however, made late in the afternoon, show that the febrile excitement had subsided, the temperatures being 98.1° and 98.4° F., while the pulsations are rapid, namely, 96 per minute, both before and after dinner. The recorded observations for the last day show temperatures of 98.5° and 98.5° F., and pulsations of 84 and 84, respectively. Headache and nausea continued through the whole day, and the patient experienced "a feeling of great oppression in the region of the stomach." These symptoms of nausea, headache, and oppression seem directly due to the administration of the preservative. On January 4 the recorded temperatures are 99° and 99° F. and the pulsations 84 and 88, respectively, and the symptoms of headache and nausea are not so pronounced. There is still a slight febrile excitement on the 5th, the temperature registering 99° and 99° F. at the two observations. Normal conditions are gradually restored, and on January 8 the registered temperatures are 98.5° and 98.5° F. and the pulsations 76 and 76, respectively, and the headache and nausea have ceased. On January 13, the last day of the after period, the recorded observations are 98.5° and 98.4° F. and the pulsations 76 and 76, respectively. All unpleasant symptoms have passed away, and the patient appears to be in a normal condition. During the entire time of this series of observations there is no marked disturbance of the character of the feces and no tendency to diarrhea is observed.

No. 5—R. V. F.

The record of the temperature of No. 5 on the 9th of December is 98° and 98.3° F. and the pulsations 86 and 85 before and after dinner, respectively. On the 16th there appeared to be a slight rise of temperature, the readings of the thermometer being 98.6° and 98.8° F. and the pulsations 84 and 101, respectively. This slight febrile disturbance is also manifest on the 17th. On the 18th it is shown to be passing away, the records of the thermometer being 98.6° and 98.6° F. and the pulsations 88 and 96 before and after dinner, respectively. There is no further abnormal development during the fore period.

The beginning of the preservative period, however, is attended with

considerable febrile excitement, the readings of the thermometer on December 22 being 99° and 98.6° F. and the number of pulsations 101 and 103, respectively, before and after dinner. The next day the febrile excitement has almost disappeared, and by the 26th, so far as temperature is concerned, has gone entirely, although the pulsations seem to be normally somewhat high—93 and 94, respectively. The condition of pulse and respiration remains quite uniform to the end of the preservative period, the temperature being on January 3, 98.4° and 98.6° F., and the pulsations 85 and 89, respectively, before and after dinner.

During the after period the conditions of temperature and pulse remain practically without change until the end of the period of observation, the record being on January 13 for temperature 98.4° and 98.6° F., and for pulsations, 83 and 86, respectively, before and after dinner.

No. 6—L. M. S.

The record for temperature for No. 6 on December 9, the second day of the fore period, shows 98° and 98° F., and for the pulse 78 and 80, respectively, before and after dinner. On the 15th there is a slight febrile movement, the recorded temperature being 99° and 99.2° F. before and after dinner. There is, however, no increase in the rate of pulsation—in fact, a small decrease—the rate being 74 and 77, respectively. This febrile disturbance is noticed to a small extent on the 16th, but has disappeared on the 17th. On December 22, the beginning of the preservative period, the recorded observations for temperature are 98.7° and 99° F. and the pulsations 80 and 87, respectively, before and after dinner. On December 28 there is a slight febrile movement, indicated by a temperature of 98.6° and 98.2° F., respectively, while the rates of pulsation are 78 and 80, before and after dinner. This febrile movement is continued through the 30th and 31st, and on January 1 the temperature has returned almost to normal, registering 98.5° and 98.7° F., respectively. On January 3, the last day of the preservative period, the temperatures registered are 98.6° and 99° F., and the rates of pulsation 76 and 82 beats per minute, respectively, before and after dinner.

On January 5 there is a slight recurrence of febrile symptoms, the registered temperatures being 98.2° and 98.5° F. There is no marked departure from the normal in the temperature and the rate of pulsation during the remainder of the after period.

Series II.

No. 7—E. R. M.

Observations made on the third day of the fore period, January 21, show recorded temperatures for No. 7 of 98° and 98.4° F., and the pulsations 78 and 81 per minute, respectively, before and after dinner.

There are no abnormal symptoms of any kind exhibited at the beginning of the fore period. On January 26 the feces are voided twice, namely, at 11 a. m. and 4.30 p. m. The second movement is described as somewhat soft. There are no further variations from normal conditions observed or recorded during the fore period.

On the first day of the preservative period the recorded temperatures are 98.4° and 99° F. and the pulsations 76 and 80, respectively, before and after dinner. On this day there are also two movements of the bowels, and the feces in both instances are recorded as very soft. On the 29th the feces were voided three times, namely, at 8.45 a. m., 5 p. m., and 7.30 p. m. The first and second movements are described as soft, and the third as very soft, indicating incipient diarrhea. There is no febrile disturbance, however, and no further departure from normal. The diarrheal symptoms vanish on the following day. On February 1, the first day of the second subperiod of the preservative period, a slight headache is noted, and recurrence of the diarrheal symptoms—the second movement of the bowels being described as semiliquid. The diarrheal symptoms disappear on the following day, but a light headache continues. On February 3 the feces are voided twice, and the second movement is described as very soft; the headache continues. The symptoms of diarrhea and headache disappear on the following day, the last of the second subperiod. On the 7th, near the end of the third subperiod, there is a very severe headache in the morning, becoming lighter in the afternoon, but no further departure from normal conditions. A distinct febrile movement is indicated on the 10th, on which day 4 grams of boric acid are administered, the recorded temperatures being 98.5° and 98.7° F., and the pulsations 80 and 86. The loss of appetite becomes so pronounced that no breakfast can be eaten on the 10th, there is a severe headache in the morning, becoming lighter in the afternoon, and the subject discloses marked symptoms of indigestion and ill health. On the 11th, although no boric acid is given, the headache persists during the whole day. There is, however, no further tendency toward diarrhea, although some slight febrile tendencies are manifest. The patient is in a condition unfit for further observations. It is quite probable that the loss of appetite, with its attendant symptoms and the headache, is due to the action of the preservative. It is, however, not evident that the slight diarrhea manifest at times is due to this cause, since it disappears during the latter part of the observation period, although the amounts of boric acid are increased.

No. 8—J. H. E.

The recorded temperatures for No. 8 on the 21st of January, near the beginning of the fore period, are 98.1° and 98.7° F. and the pulsations 88 and 89, respectively, before and after dinner. The feces

are marked as soft. There are no variations from the normal noted until the 26th of January, when No. 8 reports a very bad cold, affecting chiefly the larynx and bronchial tubes. The cold is better on the following day, when, on the advice of a physician, 10 grains of quinine are taken. There is only a slight febrile excitement, the recorded temperatures being 98.6° and 99° F.

On the 28th, the first day of the preservative period, the symptoms of the cold have diminished and the temperature is normal, but no passage of feces is recorded. The next day there is a slight febrile excitement, and the feces voided are firm and dark colored. The febrile excitement continues on the following day, namely, the 30th, but the temperature is again almost normal on the 31st, which is the last day of the first subperiod. On the 2d of February the feces are voided twice, the second movement marked as soft and dark colored. On February 3 there is a very marked diarrhea, five movements of the bowels being recorded and the feces being very soft and yellow in color. There is, however, no appreciable febrile excitement. During the whole of this period, namely, the second preservative subperiod, No. 8 had more or less of a dull headache, followed by gastric irritation, with marked nausea and vomiting. The character of the vomited matter is a mucous, watery discharge. There are also marked pains in the intestines, which are relieved by the establishment of the diarrhea above referred to. The character of the feces toward the end of this period is very thin and extremely yellow. There seems to be at first a depression of the temperature rather than a rise, since the recorded observations on the 5th of February are temperature 96.9° and 98.1° F. and the pulsation 60 and 66 per minute, respectively. During this period also, on account of illness, No. 8 missed eating breakfast and lunch on February 3. By reason of the nausea and headache developed in the case of No. 8, a further administration of boric acid to him is discontinued on February 3. The disturbed condition, however, of the patient continues, with a considerable febrile excitement on the 9th, the temperature reaching 100.4° F. There is a gradual improvement after this in the general symptoms of the patient, the headache and nausea disappearing, and there are only occasional variations from the normal temperature. The patient, however, is left in a condition in which further observations respecting the influence of the preservative upon the digestive processes are of no value, although he remained under observation continuously until the 15th of February, which would have been the end of the regular after period if the members of the series had retained their ability to go through with the work required. In this case there exists a probability that the boric acid induced or increased the nausea and vomiting complained of and that the diarrhea established may be in some measure due to the same cause. On a subsequent occasion, however, this subject took

even larger quantities of the preservative than those taken during this period without reestablishing the pronounced symptoms described.

No. 9—E. B. D.

The data recorded for No. 9 on January 21, near the beginning of the fore period, are temperature 98.6° and 98.7° F. and pulsations 73 and 80 before and after dinner, respectively. On the 23d pronounced symptoms of febrile disturbance are manifest, the recorded temperatures being 99.1° and 99.2° F. and the pulsations 84 and 88, respectively. A slight decrease of temperature is noted on the following day, but the quickness of the pulse is maintained. A marked increase and febrile excitement are noted on the 25th, the temperatures recorded being 99.3° and 99.4° F. and the pulsations 92 and 90, respectively. The temperature is still higher on the 26th, being 100° and 100.1° F. and the pulsations 84 and 94, respectively, before and after dinner. Symptoms of grippe, so called, are manifest, complicated with a very bad cold already two days old, with a severe headache during the preceding night, accompanied by neuralgia in the head which is intermittent. The illness is so pronounced as to prevent the attendance of No. 9 at all on the 28th. On the 29th the cold is found to be somewhat better and the temperature is lower, the feces being hard and deeply colored. The symptoms of grippe have so developed on the 29th that No. 9 is dropped from the table, as it is evident that he is in no condition to begin any experiments with preservatives in the food.

No. 10—W. J. J.

The recorded observations of No. 10 on January 21, the third day of the series, are temperature 98.6° and 98.8° F. and pulsations 80 and 80, respectively. No notable variations from normal conditions are apparent during the continuance of the fore period, save on the last day, January 27, when there are two movements of the bowels.

During the first preservative subperiod no marked variations in the vital data are noticed. The data continue practically normal, with very slight variations, during the second subperiod also, which includes the days from February 1 to February 4, inclusive. The third subperiod passes also without any notable variation from the normal conditions. On February 9 and 10, 4 grams of boric acid a day are given to No. 10. On the 10th a persistent dull headache develops. There is a slight increase in the temperature, the record being 98.8° and 98.6° F., and also a slightly increased rate of pulsation, the data being 80 and 92, respectively, before and after dinner. On the following day very marked effects are noticed—a failure of appetite, general feeling of malaise, and discomfort. The effects, however, in the case of No. 10 are not nearly so marked as in the other two cases noted, but they are distinct and show marked disturbances with this quantity

of the preservative. The subject is still in a condition on the 15th of February which renders his attendance on an after period under observation impracticable.

No. 11—J. S. C.

The recorded data for No. 11 on January 21 are temperature 98.2° and 98.2° F. and pulsations 80 and 82 per minute, respectively, before and after dinner. The fore period passes without any notable variation from the normal condition noticed at the beginning thereof.

On the 28th, the first day of the preservative period, the recorded observations for temperature are 98.5° and 98.5° F. and for pulsations 76 and 78, respectively, before and after dinner. On the 31st, at the end of the first subperiod, there is no marked variation in the data except a slight increase in temperature, which is recorded as 97.9° and 97.9° F., respectively, before and after dinner. The second subperiod also passes without any very great variation, but by reason of the disturbed condition of the health no preservative is given after February 2. The temperature is somewhat higher on February 4, the record reading 99.1° and 99.4° F. and for the pulsations 88 and 90, respectively. This febrile tendency has partly passed away on the 5th, and normal conditions continue to the 8th. There is developed, however, during this period a dull and continued headache, with a watery, bloodshot condition of the eyes, and a feeling of general malaise, which may be partly due to the preceding use of the preservative. This connection, however, is not demonstrated.

No. 12—B. J. T.

The recorded observations of No. 12 on January 21 are temperature 98.4° and 98.6° F. and pulsations 86 and 96, respectively, before and after dinner. There are no notable variations in the data, with the exception of the second movement of the bowels on January 27. The feces previously voided during this period have been very hard and dark, and the second movement on the 27th is described as soft and dark.

On the first day of the preservative period the recorded observations are 98.7° and 98.9° F. for the temperature and 92 and 96, respectively, before and after dinner, for the pulsations. These data indicate a slight febrile excitement. There are no marked disturbances during the first subperiod, with the exception of a febrile excitement on the 31st, when the temperatures registered are 99° and 99.1° F. and the pulsations 84 and 104, respectively, before and after dinner. These conditions continue on February 1, the first day of the second subperiod. On February 2 No. 12 is suffering with a severe headache, which he states began the day before. The headache is described as being slight in the morning and heavier at night. No. 12 has also contracted a very slight cold. The febrile excitement noticed on this

day, namely, a temperature of 99.9° F., after dinner, with a pulsation of 100, is doubtless due to the cold rather than to the action of the boric acid. On the 3d the headache is described as having been very severe during the night, but not so severe during the day. There are also two movements of the bowels, the first dark and soft and the second dark and very soft. The febrile excitement also continues, the recorded temperatures being 99.6° and 99.7° F. and the pulsations 96 and 100 before and after dinner. The conditions described continue during the 4th of February, the last day of the second subperiod. Under the continued administration of borax these symptoms are very much accentuated, and No. 12 is in such a condition on the 6th of February that the further administration of boric acid is discontinued. On February 16 No. 12 has sufficiently recovered to take some of the preservative again, but the interruptions in the observation due to his illness render the further study of his case, as a whole, in connection with the series, of but little value for the supplementary period. The amount of boric acid given on the 16th is 1 gram; on the 17th, 2 grams; on the 18th, 3 grams; on the 19th, 4 grams, and on the 20th, 5 grams. Nos. 8, 9, and 11 also take part in this special test. No. 12 is then excused from further attendance, his condition being such as to render further consideration of the case undesirable. In this, as in the three other cases, the administration of the boric acid may be associated with the production of the headache, malaise, nausea, and general distress from which the patient suffers, but there are also symptoms of grippe. The preservative appears to cause no trouble whatever, at least any that can be noted, by inducing diarrheal symptoms or any marked increase in the volume of the urine.

Series III.

No. 1—J. N.

The observed data of No. 1 on February 19, the first day of the fore period of Series III, are temperature 98.1° and 98.4° F. and pulsations 62 and 69 beats per minute, respectively, before and after dinner. A light febrile disturbance is noticed on February 22, the thermometer registering 98.6° and 99° F. A similar slight increase of temperature is also noted on the 26th, but is not of a character to incite apprehension. The last day of the fore period the temperature registered is 98.5° and 98.8° F. and the pulsations are 57 and 66, respectively, before and after dinner. There are no departures of any marked importance from the normal state other than the slight febrile excitement mentioned during the fore period.

The first day of the preservative period, namely, February 28, the data registered are 98.7° and 98.5° F. for temperature and 78 and 75 for pulsations. On this day there is a second movement of the bowels, and the feces are soft and of a light color. A similar record is made

on March 2. No other departures from the normal are noted for the first subperiod (February 28 to March 3, inclusive). On March 5, during the second subperiod, a headache and feeling of fullness in the stomach are developed, but the symptoms are not sufficiently marked to cause any disturbance in the ordinary functions of the body. On March 7, the last day of the second subperiod, additional symptoms of disturbance of digestion are noted in the form of severe pains in the stomach and intestines. On March 8 decided symptoms of malaise and indisposition and loss of appetite, including pains in the head and the intestines, are developed. On the next day there is a very severe dizzy headache and continued pain in the intestines during the whole of the day. There is, however, no increase of temperature and no diarrhea. The headache and pains persist, the headache especially being very severe on March 10, with a slight febrile excitement, the recorded temperatures being 98.8° and 99° F. The headache increases in intensity during the 11th, and there is a marked rise of temperature, the recorded observations being 100.2° and 100.2° F. and the pulsations 98 and 92, respectively, before and after dinner. This subject is in a rather bad condition at the end of the third subperiod. The quantity of boric acid taken during these periods is 1 gram a day during the first period of four days, 4 grams during the first two days of the second period of four days and 2 grams the other two days, and 3 grams during the first and third days of the third period and 2 grams the other two days. The exhibition of boric acid is discontinued on March 11.

On March 12, the first day of the after period, there is still considerable headache, and a slight hemorrhage from the nostrils at 6 a. m. The temperature, however, has declined, but is still above the normal, being 99.6° and 99.8° F. Headache and bad feeling have largely passed away on the 13th, and the temperature has also fallen, the registrations being 99.1° and 99.1° F. On the 15th the temperature is again almost normal, the registrations being 98.7° and 98.8° F. and the pulsations 63 and 67 per minute, respectively, before and after dinner. The headache, pains in the intestines, and general feeling of malaise have almost disappeared. On the 16th the normal condition of the body apparently is restored, but there is a slight bleeding of the nose.

On March 19, the last day of the after period, the recorded temperatures are 98.6° and 98.8° F. and the pulsations 60 and 64 per minute, respectively, before and after dinner. The normal feeling of health is apparently completely restored. In this case it is highly probable that the headache, pains in the stomach, and general ill feeling experienced during the preservative period are chiefly attributable to the effect of the preservative and are not due to any incidental abnormal condition.

No. 2—F. C. W.

The recorded data for February 19 are temperature 98.5° and 98° F. and pulsations 71 and 73 per minute, respectively, before and after dinner. All the functions of the body appear to be normal. The last day of the fore period, namely, February 27, the body functions are still entirely normal, the recorded temperatures being 98.4° and 98.2° F. and the pulsations 65 and 85 per minute, respectively, before and after dinner.

The first day of the preservative period the recorded observations show a temperature of 98.4° and 98.2° F. and the pulsations 76 and 80, respectively. On March 3 there is a marked febrile disturbance, the recorded temperatures being 99.7° and 99.2° F. and the pulsations 105 and 109 per minute, respectively, before and after dinner. A slight headache also is developed, ascribed by No. 2 himself to taking a slight cold. The febrile excitement has almost disappeared on the following day, the recorded temperatures being 98.9° and 98.9° F. and the pulsations 99 and 99, respectively. The symptoms of headache and malaise are recorded as being the same as the previous day, and the symptoms of a cold are firmly established. On the 5th there is again an increase in temperature, the recorded data being 100.3° and 100.1° F. and the pulsations 106 and 106, respectively. There is a marked loss of appetite and the headache has increased. The fever on the 6th has practically disappeared, the temperature being 98.8° and 98.8° F. and the pulsations 85 and 85, respectively. A very marked increase in the fever is noticed on the 7th, the recorded temperatures being 100.3° and 100.3° F. and the pulsations 106 and 103, respectively. The subject describes his symptoms as those of taking cold all day and as feeling very badly. On March 5, by reason of the general headache and feeling of uneasiness, only 2 grams of boric acid are given, the other subjects receiving 4 grams each. On the 6th the boric acid is omitted altogether, and on the 7th only 1 gram is given. On the 8th, by reason of the increased indisposition, loss of appetite, and general ill feeling of No. 2, the administration of boric acid is discontinued in his case. On the 9th the cold is still very bad; headache persistent; aching muscles; general symptoms of grippe; and a temperature about 1° above normal. On the 10th symptoms of cold have almost disappeared and the temperature and pulse are normal, the subject feeling very much better. On the 11th he describes himself as feeling perfectly well in every respect except the persistence of a slight cold. Temperature and pulsation, however, are perfectly normal.

At the beginning of the after period—March 12—the recorded data are temperature 98.2° and 98° F. and the pulsations 60 and 65, respectively. The normal condition is continued throughout the after

period, the recorded observations on the 19th being for temperature 98.4° and 98.2 F. and pulsations 71 and 79, respectively.

The case of No. 2 presents some difficulties in interpretation on account of the coexistence of a severe cold with the period of administering the boric acid. Inasmuch, however, as the cold still persists after the administration of the boric acid has ceased, but the symptoms of headache, loss of appetite, and general bad feeling in the region of the stomach cease when the ration of boric acid is withdrawn, it seems only just to conclude that at least a portion of the unfavorable symptoms manifested during the preservative period are due to the administration of the preservative. This case, however, is not nearly so well defined as the preceding one.

No. 3—W. S. O.

On February 19, the beginning of the fore period, No. 3 appears to have a slight febrile disturbance, the recorded temperatures being 98.7° and 99° F. and the pulsations 78 and 84 per minute, respectively, before and after dinner. There is also a slight febrile disturbance on the 24th, the recorded temperatures being 99.1° and 99.7° F. and the pulsations 86 and 101, respectively. This condition has practically passed away at the end of the fore period, on the 27th, the conditions remaining normal, although there is an increase of temperature recorded after dinner of 1°. This, however, may have been an error of observation, as there appears to be no other evidence of febrile excitement.

At the beginning of the preservative period the recorded observations are temperature 98.3° and 98.4° F. and the pulsations 82 and 84 per minute, respectively, before and after dinner. On March 2 the feces are described as being less firm than during the fore period. A febrile disturbance appears on the 3d and 4th, but it is not of a marked character. On March 5 there is a slight disturbance in the lower intestines, accompanied with pain and a desire to go to stool. On March 6 headache is developed—at first light, later in the day more severe. On March 7 the headache still persists, but is not so severe as on the preceding day, though a general tired feeling is noticed. There is no marked increase of temperature or other disturbance of the bodily functions. The headache continues on the 8th, on which date 3 grams of boric acid are given. A severe headache develops on the 9th, with a feeling of constriction and pressure across the forehead. On March 10 the headache persists, but is not so severe, and a general tired feeling is experienced. The headache also continues on March 11, which is the last day of the exhibition of boric acid; but there is no diarrhea or other disturbance of the bodily functions noted. The temperature is normal on this day, but the pulsations are slightly more rapid than usual, being 94 and 96 per minute, respectively, before and after dinner.

On March 12, the beginning of the after period, the temperature and pulsations are normal. A slight headache, however, still persists. The headache has disappeared on the 13th, the second day of the after period. On the third day of the after period a slight febrile disturbance is developed and a recurrence of the tired feeling is experienced. Practically normal conditions supervene until the 17th, when there is again a recurrence of the tired feeling and a very slight headache. This slight indisposition continues also on the 18th. On the 19th, which is the last day of the after period, the pulsations and temperature are practically normal, but No. 3 describes himself as not feeling quite up to the standard and as having slight pains in the stomach.

The data in the case of No. 3 are also not quite distinctive. The headache and general feeling of malaise manifested during the preservative period might be attributed to the cold or to some incidental disease, but they appear also to be due, at least in part, to the administration of the boric acid, although these disturbances continue, in a less marked degree, during a part of the after period. It is, of course, reasonable to suppose that such disturbances would continue for a short time during the after period, but in this instance they persist to a certain extent to the close of that period. It is barely possible that the effects of the boric acid may have continued during this whole time, but in the light of other experience this is not likely. The data, therefore, obtained by these observations are not to be too positively interpreted.

No. 4—E. C. S.[a]

The first complete observations on No. 4 are made on February 21, when there appears to be a slight febrile disturbance, the recorded temperatures being 99.5° and 100° F. and the pulsations 72 and 72 per minute, respectively, before and after dinner. On February 23 there are two movements of the bowels instead of one as usual, and there is still a slight febrile excitement, though not at all well marked. On the last day of the fore period, February 27, the recorded data are temperature 97.5° and 98° F. and pulsations 68 and 75, respectively. The first record for temperature is probably due to an error of observation of 1° in the reading of the thermometer.

The first day of the preservative period exhibits no abnormal data of any description. Two movements of the bowels are recorded on March 2, the first marked as soft and the second as very soft, but this is not pronounced enough to be regarded as even an intimation of diarrhea. The second movement on the 4th of March is extremely watery and partakes of the nature of a diarrheal discharge, with pains and burning sensation in the intestines. At 1.30 p. m. 450 cc of cloudy urine are voided, forming immediately a white precipitate. A

[a] E. C. S. takes the place of W. L. D. (No. 4 of Series I), who withdrew from the experiment at the end of Series I.

slight headache is noticed. The intestines continue uncomfortable through the night, with headache all day on the 5th. In the afternoon of the 5th slight nausea is experienced. Headache continues two days longer, with slight giddiness on the 7th. A slight febrile disturbance is manifest on March 8, the recorded temperatures being 99° and 98.8° F. and the pulsations 80 and 92 per minute, respectively, before and after dinner. On March 11, the last day of the preservative period, the recorded data are temperature 98.7° and 98.4° F. and pulsations 88 and 88, respectively, before and after dinner. There is a feeling of nausea all the afternoon and a dull headache, accompanied by a burning of the skin over the entire body and a weakness and trembling of the knees.

No abnormal data are recorded during the after period except in two cases, where the second movement of the bowels is described as being very soft. A tendency to constipation develops on March 15, no movement of the bowels being recorded for that day. This constipation, however, does not persist beyond the day. The recorded observations for March 19, the end of the after period, are temperature 96° and 96.2° F. and pulsations 84 and 84. The data for the temperature evidently are erroneous, due either to a faulty marking of the thermometer or to an error in reading.

The above data in the case of No. 4 show that a marked influence upon the observed bodily functions is produced by the administration of the boric acid. In so far as the phenomena manifest are concerned the functions of the body are considerably disturbed during the use of the preservative.

No. 5—H. C. G.[a]

The recorded data for No. 5 at the beginning of the fore period are 98.2° and 98° F. for temperature and 78 and 82 for pulsations, respectively, before and after dinner. No abnormal data except an apparent low temperature, sometimes falling slightly below 98, are observed during the continuance of the fore period.

At the beginning of the preservative period the recorded data are 98° and 98.2° F. for temperature and 84 and 84 for pulsations, respectively. The recorded data show no variations from the normal until March 6, when the registration for temperature is 1½° below normal, evidently due to an imperfect thermometer or error in observation. On March 7 No. 5 awakes with a headache from which he has suffered during his wakeful moments during the preceding night, and this headache persists during the day. There are no other disturbing symptoms. On March 8 the headache persists during the entire day, but there is no febrile excitement or other aberration from the normal. On March 9 No. 5 states that he has slept poorly during the previous night; his

[a] Takes the place of R. V. F. (No. 5 of Series I), who withdrew from the experiment at the end of Series I.

head is not clear and the headache persists all day; he describes himself as not being able to make calculations and to be sure of being right. This feeling of disturbance increases toward night. There appears to be a slight increase in temperature, the recorded observations being 98.6° and 99.4° F. On March 10 No. 5 states that he has slept only a few hours during the previous night, having suffered with a headache during the night and also during the whole day; brain clouded; symptoms of cold during the night, which continue all day; a tendency to constipation is also manifest and a feverish feeling is described. This feverish feeling is shown by the recorded observations of temperature, which are 99.8° and 99.8° F. The pulsations are also increased to 106 and 100 per minute, respectively, before and after dinner. On March 11 the constipation has increased so that there is no movement of the bowels. The temperature and pulsations remain the same and the general feeling of uneasiness persists.

On the first day of the after period the temperature and pulsations are again normal and the general feeling of uneasiness has largely disappeared. On March 17 No. 5 describes himself as again feeling perfectly normal, the recorded observations for this day being 98.2° and 98° F. for the temperature and 76 and 80 for the pulsations. On March 19, the last day of the after period, the recorded observations for temperature are 97.8° and 97.8° F. and for the pulsations 76 and 84.

These data seem to point with a great deal of significance to a marked disturbance of the functional activities due to the administration of the preservative. No. 5, however, is said by Doctor Geddings to be very impressionable and responsive to suggestions concerning pain and other symptoms. The headache, sleeplessness, and general feeling of oppression appear clearly to be due, at least in part, to the effect of the preservative upon the system. As noted, however, there is no tendency whatever in this case to the production of diarrhea, but on the contrary to the opposite condition.

No. 6—L. M. S.

The recorded observations for No. 6 on the 19th of February, the first day of the fore period, are 98.3° and 99° F., respectively, for the temperature and 88 and 89 for the pulsations. No abnormal data are recorded for the fore period, the record for the 27th, the last day of the fore period, being 98.7° and 98.8° F. and the pulsations 78 and 79, respectively.

On the first day of the preservative period, however, No. 6 develops the symptoms of a violent cold or an attack of the grippe, the temperature rising to 101.8° F. and the pulsations to 104. These violent symptoms practically disappear, however, on the following day, the temperature being 98.7° and 98.9° F. and the pulsations 90 and 92,

respectively. Normal conditions also prevail on March 2. A slight febrile disturbance is again marked on March 3. No marked symptoms of an abnormal nature are developed until the 7th of March, at the end of the 2-gram preservative period. On this day No. 6 suffers with severe pains in the stomach after breakfast. These pains pass away during the morning, but return again at 2 p. m. after luncheon and at 6 p. m. after dinner. Headache persists during the entire day. Headache also persists during the 8th. On the 9th the headache is described as still persisting, with pains in the bowels which at times are very violent. No. 6 suffers again somewhat from a cold, although the increase in temperature is only one-half degree, and takes 4 grains of quinine. Headache persists during the 10th, with pains in the back and a burning sensation in the face. There is no fever, however, during the 10th, and no tendency to diarrhea, but rather to the opposite condition.

Constipation is well marked on March 11, no passage of the bowels being recorded. and the headache continues. The headache persists also, but with less intensity, on the 12th, although this is the first day of the after period. On the 13th the headache has disappeared, and the boric acid has practically disappeared from the urine. On March 17 the appetite, which has been very much deranged during the preservative period. is reported as again good, and No. 12 describes himself as feeling normal. No further variations in the normal conditions appear during the remaining portion of the after period, the data recorded for the 19th of March being for temperature 98.8° and 98.8° F. and the pulsations 76 and 78.

These data again point with considerable significance to the disturbing influences of the boric acid upon the body functions. It seems rather clearly indicated that the headache, malaise, and pains in the intestines experienced during the preservative period in this case are due to the administered preservative. It is true that on one day No. 6 suffered from a slight cold and took 4 grains of quinine, but the fact that the headaches and pains were not manifested during the fore period, that they appeared with increasing intensity as the amount of boric acid was increased during the preservative period, and gradually disappeared during the after period, as the boric acid disappeared from the urine, indicates with a marked degree of conviction that the disturbances complained of were caused, in part at least, by the preservative administered.

Series IV.

No. 7—E. R. M.

The fore period of the fourth series begins on March 20. The record for No. 7 on this day for temperature is 98.6° and 98.8° F. and pulsations 80 and 80, respectively. Apparently all the body func-

tions are exercised in a normal way. There is no departure from the normal state during the whole of the fore period, the data on the 27th, the last day of the fore period, being 98.2° and 98.4° F. and 76 and 80 for pulsations, respectively.

The data are also normal for the first day of the preservative period, March 28. On April 1, the first day of the second subperiod, No. 7 withdrew from further experimental work by reason of removal from the city of Washington. Up to this point there had been no appreciable change in the normal functions of the body.

No. 8—J. H. E.

The recorded data for March 20 show a normal condition of temperature and pulsation, and the other functions of the body are also in a normal state. There is no departure from the normal discharge of the functions of the body during the whole of the fore period, the data for the 27th of March being 98° and 98.1° F. for temperature and 76 and 79 for pulsations.

The first preservative subperiod of four days, including March 31, passes without any notable variation from the normal state. A slight febrile excitement is noticed on April 2, the temperature rising to nearly half a degree above the normal, and the pulsations increasing to 84 and 86 per minute, respectively, before and after dinner. This febrile excitement passes away the following day. The normal conditions of the functions of the body continue also during the third subperiod—namely, April 5–9, inclusive. There is no notable disturbance during the fourth subperiod, the data for the pulse and temperature remaining normal for April 14, the last day of the preservative period.

The after period also passes without any variation from normal conditions, although the recorded temperature on April 22, the last day of the after period, shows an increase—less, however, than one-half a degree and not sufficient to be indicative of any disturbance. The observed data in the case of No. 8 throughout the whole period fail to show any notable effect of the preservative as manifested in any disturbance of the normal functions. There is, however, a slight loss of appetite, the rations at times being eaten with some degree of effort. There has not been sufficient disturbance of the digestive processes to call for any special remark, however.

No. 9—A. G. [a]

The recorded data on March 20, the beginning of the fore period, are 98.5° and 98.4° F. for temperature, and 84 and 84 for pulsations, respectively, before and after dinner. The normal conditions continue throughout the fore period, except that at times No. 9 appears to register a slight decrease in the normal temperature amounting to as

[a] Takes the place of E. B. D. (No. 9 of Series II).

much as four-tenths of 1 per cent. This may be due, however, to imperfect registration or observation of the thermometer, but is not sufficient to cause any comment.

The preservative period is commenced with all of the body functions apparently in good condition, but still with a tendency to a temperature below the normal although this is not of a marked nature. On March 31, at the end of the first subperiod, the pulsations drop to 56 and 60 per minute and the recorded temperatures are slightly below 98° F. This condition passes away, however, on April 3, when the temperature and pulsation are again restored to the normal. There is a slight tendency to constipation, which is particularly marked on April 3, when no movement of the bowels occurred. The third subperiod, April 5–9, passes without any marked variation, except that on the 9th there are two movements of the bowels, instead of one as is usual. This second movement, however, is not of a nature to indicate any tendency to diarrhea. There is a marked tendency to frequent urination developed during the latter part of the preservative period, the urine on the 12th being voided ten times and the total volume secreted being unusually large—1,695 cc. Toward the close of the fourth subperiod well-defined symptoms of continuing headache are developed, which are very marked on April 14, the last day of the fourth subperiod. The temperature and pulse, however, remain practically normal, the recorded observations being 98.1° F. on both tests for temperature and 60 on both tests for pulsations.

The after period passes without any notable variation in normal functions, the only change being the less frequent voiding of the urine and a diminished volume. On April 22 the recorded temperature is just under 98° F. and the pulsations 64 and 66, respectively, per minute. The functions of the bowels are normal, and the times of voiding the urine have fallen from ten per day during the preservative period to six per day, and the volume of urine has diminished until it is 1,180 cc.

A study of the above data reveals a very slight disturbing effect of the preservative upon the body functions, apparently producing frequent desire to urinate and causing a general feeling of malaise and headache toward the end of the period. These symptoms disappear when the boric acid ceases to appear in the urine in notable amounts. These symptoms, however, are not of themselves entirely conclusive, but there is also a slight loss of appetite during the preservative period, which is not sufficiently marked to be recorded among the data.

No. 10—W. J. J.

The temperature and pulsations on March 20 are normal and all the body functions are discharged as in ordinary good health. This condition of affairs continues without any notable change during the whole

of the fore period. On the last day of the fore period a sore throat develops, but it has produced at this time no febrile excitement nor interference with the appetite nor with the functions of the body.

The soreness in the throat and the cold attending it still persist on March 29. The third day of the preservative period, March 30, the cold shows a very decided improvement, and disappears entirely with the beginning of April. At the commencement of the second subperiod, April 1, slight pains in the stomach are developed in this case, which last about thirty minutes after meals. These pains, however, are not repeated to any extent worthy of note on the following days. Headache is noted on April 7, about the middle of the third subperiod, but up to this time there has been no notable change in either temperature or rate of pulsation. The functions of the body continue to be discharged in a normal way during the fourth subperiod, though there is some complaint of lack of appetite, and, occasionally, of heavy feeling in the head, though not developed to the point of headache. The appetite, however, entirely fails on the last day of the fourth subperiod, namely, April 14, although there is no febrile excitement or other disturbance of the functions. This loss of appetite persists during the 15th; in fact, the subject is so ill that he is not able to present himself for examination and for the usual duties of the day. The loss of appetite and general feeling of malaise have partially passed away on the 17th, and the subject is able to appear again for his meals. On this date the boric acid has almost entirely disappeared from the urine. There is a gradual improvement of the health up to and including the last day of the after period, namely, April 22, when the recorded observations are 98.6° and 98.6° F. for the temperature and 70 and 80 for the pulsations.

The above data show a greater susceptibility of No. 10 to the influence of the preservative than has been exhibited by any of the foregoing members during this series, and it seems reasonable to attribute the headache and feeling of malaise more or less directly to the administration of the preservative. The evidence, however, is not wholly conclusive in this respect, though it is rather easy to exclude all other causes which may have produced the effects noted. The evidence, while not entirely convincing, is corroborative in respect to the harmful effect produced by the administration of the preservative.

No. 11—J. S. C.

Normal conditions are noted at the beginning of the fore period, March 20, the recorded temperatures being 98.4° and 98.4° F. and the pulsations 78 and 78, respectively, before and after dinner. There is no notable departure from the normal state during the entire fore period, the recorded data for March 27 being 98.6° and 98.6° F. for temperature, and 72 and 78 for pulsations. On March 29 a slight

cold, which was contracted several days previous, is of sufficient importance to be mentioned by No. 11. It is not very marked in character, but is described as an extremely light attack. Apparently it has produced no febrile excitement and very little or no disturbance of the body functions. On March 30 the cold is worse and considerable fever has developed, the temperature rising to 101.2° F. Six grains of quinine are taken and the subject remains in bed during all of the afternoon of the 30th. The symptoms are very much better on the 1st of April, the temperature being almost normal; but a slight diarrhea has set in, three movements of the bowels being recorded during the day, all of them of a watery nature. During the day, also, 12 grains of quinine are taken—4 grains before each meal. By reason of the development of the cold no borax is given No. 11 after the 29th of March until the 4th of April, on which day the normal functions of the body appear to have been restored, the temperatures recorded being 98.8° and 98.8° F. and the pulsations 78 and 78, respectively. Borax is then administered regularly from dinner on the 4th until the close of the preservative period, April 14, with gradually increasing doses from one-half gram on the 4th to 3 grams on the 14th. During this period there are no variations of any marked nature, either in the temperature or the rate of pulsations, nor is there any tendency either to diarrhea or to constipation, the feces having been voided regularly once a day during the whole of the period. There is developed a marked sense of fullness in the head and heaviness of the stomach, accompanied with an impairment of appetite, but not sufficient to cause the subject to refuse to eat any of his regular rations. These symptoms become less marked and finally pass away when the preservative ceases to appear in the urine.

The data, as a whole, are not very conclusive, but show a slight tendency, which seems to be due to the added preservative, to produce heaviness and dullness in the head, a slight loss of appetite, and a general feeling of malaise. The data, however, are not entirely definite in this respect.

No. 12—B. J. T.

All the data observed at the beginning of the fore period on March 20 show a normal state with the possible exception of a very slight febrile movement, the recorded temperatures being about four-tenths of 1° above the normal and the pulsations being recorded as 96 and 88 per minute on the 20th, and 98 and 98 per minute on the 21st, the temperatures for the latter date being recorded as 98.9° and 98.6° F. This disturbance, however, is not marked enough to be called any notable departure from the normal state. The functions of the body are discharged in a thoroughly normal way during all of the fore period, the recorded data on March 27, the last day of the fore period,

being 98.6° and 98.7° F. and the pulsations 88 and 92 per minute, respectively. This subject apparently has a rather normal rapid movement of the heart, as the pulsations only once during the fore period fall below 80 and average usually about 85.

The preservative period is begun with apparently a normal state of the functions of the body organs throughout. There seems to be a slight increase in febrile excitement on April 3, during the second subperiod, the recorded temperatures being 99.1° and 99° F. and the pulsations 100 and 96, respectively. This febrile excitement has passed away on the 4th, the normal state being restored. By reason of disturbance of health, no preservative was given to No. 12 from April 1 to April 5, inclusive. On the 7th, during the third subperiod, when 1 gram of borax per day is administered, there is a second movement of the bowels, but no tendency to diarrhea. There are two movements also on April 8, but without any diarrheal tendency. The ordinary normal condition of the body apparently remains unchanged during the remainder of the preservative period, the recorded data for the last day, the 14th, being 99° and 99° F. for temperature, and 88 and 92 for pulsations. There is manifest in this case also a slight loss of appetite, a tendency to fullness of the head, and a general feeling of malaise, not sufficient, however, to interfere with the ordinary daily vocations nor with the consumption of the regular rations.

The data in this case are also of a rather doubtful signification, because of the conditions of ill health obtaining during a part of the period, yet they exhibit a slight tendency toward a disturbance of the normal conditions of appetite and circulation, possibly due to the administration of the preservative. This conclusion, however, like the one in the case immediately preceding, may be subject to modification, and the phenomena observed may possibly be referred to other causes.

Series V.

The method of experimental work is changed somewhat in this series for the purpose of extending the observations over a longer period, and at the same time studying, so far as possible, the effects of the exhibition of small quantities of the preservative over a comparatively long period of time. There is no change in the character of the experiment other than this.

The fore period begins on April 24 and extends until May 1. The preservative period begins on May 2 and continues until June 20—a period of fifty days. The after period begins on June 21 and ends June 29. The individual records of the members of the table during the period follow.

No. 1—J. N.

The vital functions appear to be in a perfectly normal condition on the 24th of April. The recorded temperatures on that day are 98.4°

and 98.6° F. and the pulsations 63 and 69 per minute, respectively, before and after dinner. During the morning of this day, while exercising, No. 1 dislocated his shoulder, but this accident seems to have had no effect upon the vital organs. During the next day, however, there is a slight febrile excitement, probably due to this accident, the recorded temperatures being 98.8° and 99° F. and the pulsations 72 and 71. This slight febrile disturbance has passed away on the following day. On May 1 all of the body functions are performed in a normal manner.

During the preservative period there are no disturbances of the normal functions noted. No. 1 occasionally indulges in light outdoor sports, as playing ball, riding on the wheel, etc. This exercise occasionally causes a quicker pulse than otherwise, but no other disturbance. On the 8th there are two movements of the bowels recorded, but no tendency to diarrhea is noticed. On the 12th No. 1 is suffering from a slight attack of nosebleeding, but it is not of sufficient magnitude to produce any marked effect. On the 13th symptoms of headache develop, and also pains in the back, but not of a very pronounced nature. There is no febrile disturbance and no other indication of ill health. On the following day the headache has passed away, but recurs again on the 24th, without, however, any other symptoms of ill health. A recurrence of the nosebleeding is noted on the 26th, but the loss of blood is very small. There is a return of the nosebleeding during the night of the 27th, when No. 1 is asleep, a considerable quantity of blood being collected in the fauces and discharged in clots during the following day. There is a slight febrile excitement noticed on this day, the recorded temperatures being 98.8° and 98.8° F. The headache again returns on June 2, with a general feeling of discomfort in the head. This feeling of discomfort has been experienced for three or four days, but has not been of sufficient intensity to warrant an entry until June 2. No. 1 describes the symptoms as a kind of pressure in the head during this period, and a slight impairment of the hearing. This feeling in the head is also noticed in a very marked degree on June 5 and continues on the 6th and 7th. During this period No. 1 also suffers from a slight attack of tonsilitis, which seems, however, to have no connection with the bad feeling in the head, which persists and even grows worse. The feeling is stated by No. 1 to be indescribable, but something like a difference of pressure between the internal and external portions of the head. On the 29th the feeling is described as that of the head seeming to be very large, which feeling continues, being less pronounced, however, on some days. It seems to culminate on June 15, on which date No. 1 suffers very intensely from this continued pressure in the head. Inasmuch as there were only five days left of this period, however, it was deemed advisable to continue until the end. There is some improve-

ment, though not a complete cessation of the headache, up to the 20th, when the preservative period ends. There has been during all this time no other disturbance of any nature in any of the body functions, the temperature remaining quite constant, with only such variations in the pulsations as can be easily attributed to the character of the exercise taken.

With the cessation of the administration of the preservative the pains in the head rapidly disappear and no complaint is made concerning them during the after period. On the 29th of June, at the close of the observation, the normal conditions, even in respect to the headache, are apparently entirely restored. No appreciable quantities of boric acid are found in the urine after June 21.

A review of the above data seems to indicate a rather close connection between the continued administration of the preservative, even in small quantities, and the occurrence, recrudescence, and persistence of the headache, perhaps more properly described as an uncomfortable feeling in the head. During all this time there is no disturbance of the body functions save as indicated in the analytical data and record of body weights, the temperature remaining practically normal and the other functions of the body being conducted in the ordinary manner. There seems to be no connection traceable between the occasional nose-bleeding noted and the administration of the preservative, unless it may be associated with the apparent increased blood pressure in the head.

No. 2—F. C. W.

The vital functions are normal on April 24, the recorded temperatures being 98.4° and 98.4° F. and the pulsations 77 and 75 per minute, respectively, before and after dinner. Somewhat vigorous exercise and ball playing on the 28th of April cause an increase in the pulsations, which reach the number of 100. There is no febrile disturbance connected therewith. On May 1, the last day of the fore period, all the vital functions are normal.

During the preservative period there are no disturbances of the vital functions until the 6th of May, when a slight headache is reported. This headache did not recur for some time and can not be justly attributed to the administered preservative. The next date on which headache is noted is May 18. It still persists on the 19th, in conjunction with a dull, heavy feeling, as described by No. 2. There is no diarrhea or tendency thereto and no increase in temperature, while the other vital functions are normal. The headache recurs on May 22, followed by a few days of intermission; then another recurrence on the 27th, persisting with increased intensity on the 28th and a general feeling of malaise. On the 29th the headache increases, the appetite fails to a considerable extent, and a general ill feeling prevails. After a day or two of intermission there is a recurrence of the

headache on the 31st, the appetite being poor, the subject complaining of a general miserable feeling, with a peculiar burning, heavy sensation in the stomach. This feeling has existed for several days before the 31st, but has not been deemed worthy of note until that day, it having increased greatly for a week or ten days, according to the statement made by No. 2. June 1 brought no relief from these ill feelings, the headache persisting, appetite poor, and the general feeling of discomfort continuing. No improvement is noted on June 2. The discomfort complained of is not sufficiently pronounced to prevent the subject from attending to his ordinary duties. The appetite, however, has so diminished that No. 2 is not able to eat the whole of his rations on June 3, the headache and the heavy, burning sensation in the stomach being very pronounced. These symptoms continue without intermission and are somewhat accentuated on June 6. On the following day there is an improvement in the symptoms and the appetite is also better, but this gain vanishes on the 8th. The severe headache continues all day on the 9th, but is not so pronounced on the 10th, though the improvement in the appetite is not noticeable. On the 11th and 12th the headache is not so severe and the appetite is a little better. The administration of the preservative was discontinued after the 11th. By the 14th the appetite seems to be quite restored, though the headache and other ill feelings are not entirely gone. On the 15th of June there is quite an improvement, but this is only temporary, and all the troublesome symptoms of the bad headache return on the 16th. During the remainder of the period there is some slight improvement and the discomfort is not so well marked. The temperature and pulsation remain normal during the whole time. There is no tendency nor indication of diarrhea nor of any other disturbance of any consequence save those noted.

The after period sees a general improvement and disappearance of the headache and burning sensations in the stomach and the general feeling of malaise. On the 29th of June, when the observations cease, No. 2 is apparently restored to a perfectly normal condition.

The data in the above case are even more pronounced than in the case of No. 1 in showing a direct connection between the headache, heaviness and burning sensations in the stomach, and general discomfort, on one side, and the preservative which has been administered during this period of fifty days, on the other.

No. 3—W. S. O.

At the beginning of the fore period there appears to be a slight febrile excitement, the temperatures recorded being 99° and 99° F. and the pulsations 84 and 94, respectively, before and after dinner.

This condition persists for two or three days. By the 27th, however, the temperature has fallen almost to the normal, although the

pulsations continue quite rapid. On May 1 the temperature and pulsations are normal.

At the commencement of the preservative period there is a tendency manifested, as in the fore period, to a temperature slightly above the normal, though not sufficiently so to indicate any very marked febrile disturbance. On May 6 there is a marked increase in the frequency of the pulsation, which is ascribed to the fact that, being a member of the District Militia, No. 3 was engaged in drilling for an hour and a half previous to coming to dinner. This raised the pulsation to above 100, the recorded observations being 126 and 106, respectively, before and after dinner. There is also a slight febrile excitement, but nothing of a marked character. No further departures from normal conditions are noted until the 18th of May, when a slight headache develops, which persists during all of the afternoon. This symptom disappears on the following day, and all conditions then remain normal until the 29th, when there is a recurrence of the headache, which is especially severe during the evening. This continues on May 30, the headache persisting during the whole day, but has passed away on the following day, and there is no recurrence of it during the remainder of the preservative period. On the 20th of June, the end of the period, the recorded temperatures are 98.4° and 98.8° F. and the pulsations 90 and 80, respectively.

Normal conditions continue throughout the after period. At no time during the whole series is there any tendency to diarrhea or any disturbance of the functions of the body which calls for any special comment.

The data in this case seem to indicate that the administration of the boric acid during the period of fifty days has not produced any body changes of a character sufficient to indicate any definite connection between them and the preservative administered.

No. 4—E. C. S.

In the beginning of the fore period, on the 24th of April, the recorded data in the case of No. 4 are 98.7° and 98.5° F., for temperature, and 84 and 88 pulsations per minute, respectively, before and after dinner. At the end of the fore period all the vital functions are normal, and no departure therefrom of any significance has been noted. It is observed, however, that on the last day of the fore period and during the first few days of the preservative period there is an unusually large volume of urine voided. On May 5, the fourth day of the preservative period, there is developed after breakfast a decided nausea, followed by emesis, by which a large portion of the meal is lost. Although the administration of the borax is continued, there is no recurrence of the nausea and vomiting noted up to the 25th of May, when the administration of the borax in this case is omitted, and on

the 25th of May No. 4 withdrew from the table by reason of removing from the city.

The data in this case are not of a decisive nature, though, so far as can be ascertained, the nausea and vomiting mentioned are not due to any other cause than the preservative employed. If, however, this ill feeling has been produced by the preservative administered, a recurrence of it might have been expected during the next period. It does not seem, therefore, quite possible to ascribe this incidental nausea and vomiting to the administered preservative, though it may have been due thereto.

No. 5—H. C. G.

The body functions appear to be normal at the beginning of the fore period, on April 24, the data recorded being for temperature 98.4° and 98.2° F. and pulsations 80 and 84. On April 28 there is a slight increase in the number of pulsations per minute, which are registered as 108 and 100, respectively, before and after dinner, but this is due, as indicated by No. 5, to the fact that he has just come in from a long ride on a bicycle. There is a slight tendency to constipation developed on the 29th, when no movement of the bowels is observed. The rest of the fore period passes without any other notable variation from normal conditions.

During the administration of the preservative the first symptom recorded of a disturbing nature is on May 5, when No. 5 suffers from a slight headache during the whole day. This continues on the 6th, but is not persistent, passing away during the evening. It does not recur on the 7th nor on the following days. On May 18 there is a feeling of distress in the stomach, described as indigestion, occurring immediately after dinner. There is also described by No. 5 a clouded feeling in the head. On the 19th No. 5 suffers from headache all day, increasing toward evening. There is also a marked tendency to constipation. The headache passes away during the night. On the 20th there are symptoms of a cold and slight headache, continuing all night, and the constipation is more pronounced. The headache continues on the 21st, as also does the constipation. On the 22d the symptoms of cold have passed away, and No. 5 is feeling well, but the constipation continues. There is a recurrence of the headache on the 25th, and the symptoms of cold have also returned. There is no notable increase in temperature. Cold and a slight headache continue on the 26th, a general feeling of uneasiness prevails, and there is an acute attack of indigestion after dinner. The constipation has given way to looseness of the bowels, which is almost a diarrhea, four evacuations taking place during the day. On the 27th No. 5 is quite ill with a sick headache and diarrhea. No borax is administered on the 27th. The symptoms are better on the following days, and there is a gradual improvement. There are no further marked disturbances in the body

functions during the remainder of the administration of the borax, and No. 5 is in fairly good physical condition at the end of the period on June 20.

The after period passes without any variation from normal conditions, but with a somewhat gradual improvement in the general state of the body.

The data in the above case are not decisive. The occurrence of the headache, feeling of fullness in the head, etc., may be due to the slight cold which exists and the persistent constipation. The feeling of uneasiness and symptoms of acute indigestion may be justly attributable to the administered borax. It is only reasonable to suppose that the effect produced in this direction, if any, should be more pronounced during a period when the organs were more susceptible, by reason of the slight cold and constipation, to the influences of the administered preservative. Taking the data as a whole, it may be inferred that some slight disturbance is caused by the preservative used.

No. 6—L. M. S.

All the functions of the body appear to be in normal condition at the beginning of the fore period on April 24, the registered temperatures being 98° and 98° F. and pulsations 76 and 81. During the continuance of the fore period the normal conditions continue without any notable variations. There is a slight febrile excitement on the 30th, the registered temperatures being 99.1° and 99.2° F. and the pulsations 80 and 82, respectively. On the last day of the fore period there are still indications of febrile excitement, the registered temperatures being 98.4° and 99° F. and the pulsations 94 and 95. Two movements of the bowels are also noted on this day, but without any tendency to diarrhea.

The conditions remain normal after the beginning of the preservative period until May 7, when a headache develops which persists all the night, with a feeling of gas on the stomach and nausea. By reason of these pronounced symptoms the administration of the borax is omitted on the 8th and 9th. No. 6 reports on the 9th that the headache is gradually leaving, and on the 10th the administration of the borax is again commenced. On May 19 a slight cold develops, and 9 grains of quinine are taken; 3 grains are given on the following day, when there is a marked febrile disturbance, the recorded temperatures being 99.2° and 99.8° F. The cold rapidly passes away on the following days. On the 24th there is a recurrence of the headache, which is not acute but persistent, continuing all the night. There is a dull feeling experienced, and the appetite fails. There is, however, no fever and no tendency to diarrhea. On the 25th the head is described as beginning to feel better, and on the following day the symptoms cease. There is no further recurrence of the headache until June 6.

There is no cold at this time and no febrile excitement, but a dull, heavy feeling in the head. On the 8th there has been a considerable diminution in the weight of the body, which is accredited to an excess of exercise. On the 13th of June there is a decided recurrence of the headache, attended with a feeling of weakness and nervousness, and there are also pains in the stomach at times and some nausea; 2 grains of quinine are administered. There is no febrile excitement. On the following days the headache disappears, but recurs again on the 16th of June. There are no decided symptoms of headache on the following days, but at the end of the period, on June 21, there is a general feeling of depression, though no particular variation from the normal can be observed.

During the after period there is a gradual improvement in feeling and appetite, but nothing of a marked nature. On the last day of the after period there is, however, a recurrence of the febrile excitement, the temperature being 99.2° F. and the pulsations 78 and 100.

The above data are not entirely convincing, but are of a nature to show a certain tendency during the administration of the borax toward a general feeling of unrest and discomfort. The frequent recurrence of headache may not be clearly traced in every case to the administration of borax, as in one instance at least it was attended with febrile symptoms, doubtless due to an incipient cold. The nausea and pains in the stomach, however, may be justly attributed to the administered preservative. Taken as a whole, therefore, the data seem to indicate a marked tendency on the part of the administered preservative to produce a depressed and unfavorable condition of the body.

Special Series.

In two cases, namely, R. V. F.[a] and E. B. D.,[b] a special series of observations was made by reason of the poor health and general physical unfitness of the subjects for the regular conduct of the experimental work. This was especially true of No. 13, who had pronounced symptoms of pulmonary disturbance. In these cases the analytical control of the metabolism was omitted for the most part and attention directed rather to the general effect produced by the exhibition of the preservative. Owing to the ill health of the subjects it was impracticable to determine to just what degree the symptoms observed were to be ascribed to the preservative administered. The quantity of boric acid exhibited in these two cases did not exceed one-half gram per day, and in many cases, as will be seen by reference to the schedule of administration of the special series, it was less. The

[a] Known as No. 5 in Series I; later, when made a subject of special observations, known as No. 13.

[b] Known as No. 9 in Series II and as No. 14 in special series.

special period extended from March 9 to May 1, inclusive, though No. 14 continued the experiment with the fifth series, taking the preservative until June 20, inclusive.

No. 5, later No. 13.

The observations on No. 5 (Series I) are of a fragmentary character, due to the interruption of the observations at various periods by illness brought on by causes entirely apart from the administration of the preservative. These observations are of little value for comparative purposes, but may prove of some value in tracing the effect of the preservative upon digestion and health over a considerable period of time. Observations on No. 5 were commenced on December 9. On this date the temperature of the body is normal, the pulsations 86 per minute at 5.30 p. m., before dinner, and the body weight 52.72 kilograms. There is a slight febrile disturbance on the 16th of December, which continues on the 17th and to a less extent on the 18th. On the 20th, however, the temperature is again normal, but the pulsations somewhat above the normal—namely, 90 and 94 per minute. On December 22, on entering upon the preservative period, the conditions are not very favorable, there being a slight febrile excitement, the temperature rising to 99° and 98.6° F. and the pulsations to 101 and 103, respectively, before and after dinner. The weight of the body on this date is 52.42 kilograms.

The data relating to No. 5 for this first series are included with the general discussion of that series, and so need not be repeated in greater detail here. The quantity of preservative given per day to No. 5 at this period is 1 gram from December 22 to 26, inclusive, 2 grams from December 27 to 30, inclusive, and 3 grams from December 31 to January 3, inclusive.

From January 4 until the beginning of the next series, No. 5 receives no preservative. Shortly after the end of the first series No. 5 is attacked with a severe fever and grippe, with which he is quite ill for a long time, at times being confined to his bed for several days in succession. It does not appear that this attack is due in any way to the administration of the preservative. It seems to be an ordinary attack, but of a very persistent nature, attended with loss of appetite and a low form of fever, but without any other typhoid symptoms. For this reason, at the beginning of the third series, when No. 5 would naturally have come again under observation, he was not in a condition for further experimental study and his place was taken by another. On February 24 No. 5, R. V. F. (now having assumed the number 13), is again able to appear and resume his place at the table. His weight has fallen from over 54 kilograms, before his illness, to the minimum, 49.5 kilograms on his return. There is still at this time some little febrile excitement, the temperature being

fully 99° F., and the pulsations 102 and 105. No. 13 (old No. 5), also complains of headache on this occasion. This and the febrile excitement are continued for several days. By March 2 normal conditions seem to be restored, but there is no notable increase in weight, which on this date is 50 kilograms even. The improvement continues for several days, with occasional relapses into ill feeling and frequent headaches. On March 5 there is again a slight febrile excitement, the temperature rising to 99° F. This condition passes away, however, the following day, but recurs on the 7th, thus indicating malarial conditions. On March 9 the improvement in the condition of No. 13 seems to have become permanent, and the administration of the preservative is again commenced in a quantity of one-half gram, which is again given in the same quantity on the following day. On this day there is a considerable febrile excitement and headache, evidently not due, however, to the administration of the preservative, as it is exactly similar to that which has taken place at somewhat regular intervals during the fore period. The febrile excitement continues on the following day and normal conditions are restored on the 12th, when one-half gram of the preservative is administered, but on the next day this is diminished to one-fourth gram. One-half gram per day is given from the 14th to the 19th, inclusive, during which time there is an apparent improvement in the condition of the patient, the weight having increased on March 19 to 51.4 kilograms. On March 20 there is a sharp recurrence of the symptoms of grippe, and the administration of the boric acid is suspended; the temperature runs as high as 101.8° F. and the pulsations as high as 120 per minute. This accession of fever does not seem to be connected in any way with the small quantity of the preservative taken before the attack. This illness of No. 13 continues throughout the 21st with an intensity which causes him to be absent on this day. On the 22d he returns, but still shows a slight febrile excitement, the temperature being 99° F., although it falls during the day at one time to 98.6. On the following day the chart shows that he is not well, but improving, and on the 24th, while still improving, the administration of the preservative is recommenced in quantities of one-half gram per day, which are continued through the 26th. On March 27 and 28 the quantity is reduced to one-fourth gram. From March 29 to April 8, inclusive, one-half gram is given. A general improvement in the condition of No. 13 continues until March 31, when he suffers from a slight headache, which leaves him, however, on the following day. The headache recurs on April 3 and continues on the 4th. The temperature is normal on the morning of the 4th, but a slight febrile excitement is manifest in the afternoon, the temperature rising to 99.6. The headache and febrile excitement continue without intermission and with accentuation during the 5th and 6th of April, though the febrile

excitement is not very pronounced. On the 9th only a fourth of a gram of boric acid is given, as it seems probable from the symptoms that the headaches are due, to some extent at least, to the administration of the preservative, though the fever does not seem to depend upon that agent. From April 10 on the condition of No. 13 is such as to render advisable the discontinuance of the giving of the preservative. By April 14 the body weight has fallen to 49.8 kilograms, and on the 17th the subject is withdrawn from any further observation.

Perhaps it would be difficult to find a set of data more unsatisfactory than those obtained with this man. The threatening condition of his lungs, the low vitality of his system, and the frequent recurrence of the attacks of the grippe, commingled with symptoms of malaria, make it extremely difficult to trace definitely any disturbing effect upon the system which the preservative may have produced. It is only during the period in April above referred to, when for several days there were persistent conditions of headache, that the effect of the preservative is at all discrete. In this case it is justifiable to assume from the conditions existing that some slight influence may have been produced by the preservative in establishing the condition of cephalalgia noticed. There are no evidences, however, that these small quantities of the preservative, given in this interrupted manner, had any tendency to produce nausea or other marked symptoms which are manifest in the cases of other subjects when large quantities of the preservative agent are employed. In other words, it is evident in this case, even from the fragmentary and unsatisfactory evidence at hand, that no absolutely certain prejudicial effect is produced by the administration of the preservative. It is also equally evident that in a system so disturbed and so prone to other influences as that of No. 13 experimental evidences of a satisfactory nature or leading to definite conclusions can not be obtained.

No. 9, later No. 14.

The data in this case are very similar in character to those obtained in the case of No. 5 (No. 13, R. V. F.).

No. 9 (E. B. D.) began as a regular member of the class of the second series, and the data relating to this subject during this period are sufficiently described in the section relating to that series. The febrile excitement in the case of No. 9 developed first on January 25, with a slight increase in temperature and in the rate of pulsations. The body weight on this date is 51.49 kilograms. A very bad cold is developed on the 26th of January, with the temperature rising to 100° F., and preceded during the night with a severe headache and neuralgia, the headache continuing at intervals during the day. These unfavorable conditions continue during the 27th in a very marked degree, and this condition, which seems to be the beginning of a serious attack of

grippe, is the reason for separating No. 9 from the regular table of observation and making him special. On the 29th the cold is reported better, but the temperature is still about 1 degree above the normal. Conditions are worse on January 30, and still worse on the 31st. No preservatives are administered to No. 9 and he is practically withdrawn from the table during the remainder of this period, namely, to the 10th of February, inclusive. At this time No. 9 has almost returned to a normal state, his weight on February 11 being 50.25 kilograms and his temperature only a little above the normal. On the 16th a progressive administration of the preservative is commenced, beginning with 1 gram and increasing 1 gram per day for four days, the quantity given on the 19th being 4 grams. Quite a serious illness develops on the administration of this increasing quantity of preservative, and the amount given on the 20th is diminished to 3½ grams. The body disturbance is so great at this point that no preservative is given on the 21st. After the cessation of the administration of the preservative there is a gradual improvement in the body conditions, and on the 24th of February the temperature and pulsations are normal, but the weight of the body has been reduced to 49.6 kilograms.

No. 9 is now changed to No. 14 and placed upon a special table, and no further preservative is administered until March 9, when one-sixth of a gram of boric acid is given. On this date the temperature and pulsations are but little above the normal. On the 10th the amount of preservative administered is increased to one-fourth of a gram, and on the 11th and 12th one-half gram of boric acid is given each day. On March 13 no preservative is given on account of the decided disturbance produced by the administration of the small quantities during the previous days. On the 14th No. 14 is feeling much better, and the administration of the preservative is recommenced in quantities of one-half gram per day, which is continued uninterruptedly until the 21st of March, inclusive. On the 22d and the 23d the disturbed conditions, similar to those due to the administration of the preservative, are again established, being a feeling of heaviness, malaise, and general indisposition, but without any febrile excitement. No boric acid is given on these two days. On the 24th the administration of the preservative is recommenced, one-half gram per day being given from the 24th until the 26th, inclusive; one-fourth of a gram on the 27th and 28th, and one-half gram per day from March 29 to April 4, inclusive. During this time, up to about the 3d of April, the normal conditions of the body prevail. On the 5th the malaise and ill feeling, apparently due to the action of the small quantity of preservative, are established and no preservative is given on the 5th and 6th. The normal conditions being reestablished on the 7th, the administration of the preservative is recommenced and continues in half-gram quantities daily to the 10th, inclusive. On the 11th there appears to be a

recurrence of the ill feelings above referred to, and the quantity of the preservative is diminished to one-fourth of a gram. On the 12th of April decided symptoms of illness are continued, and by reason of these symptoms, which persist for several days, the administration of the preservative is omitted from the 12th to the 23d, inclusive, although during this period No. 14 is able to appear each day, but is feeling very badly. On April 24 the symptoms of malaise and depression have mostly passed away, and the administration of the preservative is again commenced, the quantity being one-fourth of a gram. This is increased on the 25th of April to one-half a gram and continues without change to May 1, inclusive. No noted disturbances are produced in the system during this last period of the administration of the preservative. The temperature on the 30th, the day preceding the last of the administration of the preservative, is almost normal, the pulsations likewise normal, and the weight of the body 50.8 kilograms. From May 2 to June 20, inclusive, one-half gram is given daily, except on May 4, May 13, and June 9, when none is given. During this period the body conditions continue about in statu quo. There is one instance where the temperature rises a trifle above the normal during this period, but only for a short time. The weight of the body on the 27th of June is 50.6 kilograms. There is a slight febrile attack during the remaining three days, which reaches quite a degree of intensity on the last day of observation, namely, June 29, when the temperature rises to 100.4° F. and the pulsations to 104 per minute. The result of these three days of illness, supervening upon almost a month of good health, is to reduce the final weight to 48.7 kilograms.

A general summary of the data of No. 14 would seem to indicate a slight tendency on the part of the preservative, though used in small quantities, to induce a feeling of depression, lack of appetite, and general malaise. This is indicated on several occasions, as before described, where it is not quite possible to connect these feelings with abnormal conditions due to other sources. In general, however, the data obtained on this subject are also unsatisfactory, owing to a rather low degree of vitality, a tendency to febrile excitement, and other conditions evidently not connected in any way with the preservative employed. While the data which have been collected in the case of both No. 13 and No. 14 are not at all conclusive, and, as has been already stated, are in many respects indecisive, two general conclusions may be drawn therefrom: First, that the effects of small doses of the preservative over an extended period are not manifest by any disturbance of a notable character; second, in so far as the disturbances noted can be attributed to the preservative they are of an unfavorable nature.

BODY WEIGHTS.

VARIATIONS IN BODY WEIGHTS.

It is evident that any serious interference with the digestive functions would eventually have an effect in either increasing or decreasing the weight of the body. If under the administration of the preservative the digestive functions were more active and larger quantities of the nutritive elements of the food were absorbed and assimilated, the body weight would increase. In like manner, if the preservative, upon entering the circulation, exerted a restraining force on the breaking down of tissues already formed while not seriously interfering with the formation of new tissues, an increase in body weight would take place. On the other hand, if the preservative should interfere with the processes of digestion in the way of restricting or limiting the action of the digestive enzymes, or should hasten the breaking down of old tissues without materially increasing the rate of formation of new, there would be a loss in body weight. In order to determine the changes in weight, as has already been intimated, the daily weight of the body, naked, was ascertained before dinner. These daily weights have been combined into one expression for each individual, representing the whole of the time covered by the fore period, the preservative period, and the after period, respectively. These combined weights are given in Tables XI and XII (pp. 95, 96), and they are also used in connection with the daily weights in the construction of a graphic representation of changes in weight.

SERIES I.

In Series I it is seen in the case of No. 1 that the average weight for the fore period is 71.62 kilograms, for the preservative period 71.37 kilograms, and for the after period 71.64 kilograms. The mean weight for the three periods is 71.54 kilograms. In this case the change in weight is not marked, but there is an apparent tendency on the part of the preservative to diminish the body weight.

The average weight of No. 2 for the fore period is 71.89 kilograms, for the preservative period 71, and for the after period 70.87, the average weight for the whole series being 71.25 kilograms. In this case there is again a tendency manifest on the part of the preservative to diminish the body weight, but in a more marked degree than in the case of No. 1, and there is no tendency to recuperate this loss of weight after the preservative has been withdrawn. On the other hand, during the after period there is a still further (although slight) decrease in weight.

The data for No. 3 show his average weight in the fore period to be 55.22 kilograms, in the preservative period 54.61, and in the after period 54.73, the mean for the whole series being 54.85. In this

instance there is again a marked tendency on the part of the preservative to diminish the body weight and a slight tendency after the withdrawal of the preservative toward its restoration to the original weight.

The average weight of No. 4 in the fore period is 65.62 kilograms, in the preservative period 64.71, and in the after period 64.04, while the mean for the series is 64.79 kilograms. In this case there is an apparent tendency shown on the part of the preservative to decrease the body weight, and this decrease continues during the after period. It must be borne in mind that the personality of Nos. 4 and 5 is not the same in Series I as in Series III and V, and the weights as given are those of the later members based upon the variations shown by the original Nos. 4 and 5.

The average weight of No. 5 in the fore period is 73.71 kilograms, in the preservative period 74.20, and in the after period 75.39, the mean for the whole series being 74.43 kilograms. We find in this case a tendency on the part of the preservative to increase the body weight, and this tendency is still manifest after the withdrawal of the preservative, the weight continuing to rise during the after period. This increase, however, may possibly be due to the fact that the original No. 5 started in on the fore period with a larger ration than was normal with him, and it required an effort on his part to eat the selected quantity throughout the series.

The average weight of No. 6 in the fore period is 61.60 kilograms, in the preservative period 60.40, and in the after period 60.10, the mean for the whole series being 60.70. There is a marked loss in weight in this instance during the preservative period—in fact, the largest loss that is shown in the case of any of the six subjects. There is a still further loss, though not so marked, during the after period.

In all the cases in Series I except No. 5 the administration of the preservative is attended with a loss of weight. This loss is not very marked except in the case of No. 6, but its uniform occurrence, with the exception above noted, is significant. That the administration of a preservative of this kind tends to diminish the body weight appears to be reasonable from the data at hand. It is evident, however, that it is not of universal applicability and that there may be instances, as indicated in the case of No. 5, where the administration of such a preservative would tend to increase the body weight. In only three instances out of the six did the body weight show an increase after the withdrawal of the preservative, and one of these is in the case of No. 5, where the data are anomalous. In three instances, namely, Nos. 2, 4, and 6, the body weight continues to decrease after the withdrawal of the preservative. This fact might justify the conclusion that the loss in weight in these cases is not due to the preservative, because the decrease continues after the preservative is withdrawn. That this is

not a wholly justifiable conclusion, however, appears readily from the fact that by reason of the accumulative deportment of the preservative on its administration, tending to reach a maximum degree of toleration in the body, several days elapse after the withdrawal of the preservative before its entire elimination. The word "entire" is used to indicate that practically all of the preservative has been eliminated, although in point of fact traces of it may persist for a longer period.

The obvious conclusion from the above statement is that the after period is not of long enough duration to determine definitely the point in question, and this it is admitted is a just criticism of the method of investigation employed. It appears that it would have been more logical to have continued the after period for at least ten days after the practical elimination of the preservative from the body. Taking all these facts into view, it seems reasonable to suppose that the continued decrease in weight in the instances mentioned may have been to some extent due, if not entirely, to the preservative used. In this case it is justifiable to conclude that when the healthy body is in a state of equilibrium—i. e., neither gaining nor losing weight on a certain diet—the administration of the boric acid in the quantities and under the conditions described for Series I of the experiment tends to produce a slight loss in the weight of the body.

Series II.

In the case of No. 7 in Series II the average body weight in the fore period is 56.41 kilograms, in the preservative period 56.10, in the after period 55.72, and the mean for the whole series is 56.04 kilograms. In the supplementary preservative period, extending from February 16 to February 21, inclusive, No. 7 did not participate. We see in this case a slight tendency on the part of the preservative to diminish the body weight.

The average weight of No. 8 in the fore period is 66.77 kilograms, in the preservative period 65.36, in the after period 65.32, and the mean for the series is 65.82, the mean for the supplemental series being 64.65 kilograms. In this case there is a marked tendency to diminish the body weight, and this tendency continues during the supplementary preservative period. This loss in weight was doubtless due to a large extent to illness resembling the grippe, very prevalent in Washington at that time.

No. 9 of Series II was replaced in Series IV by a larger man. The weights given are therefore those of the new member, calculated on the basis of the variations of the original No. 9. The data for No. 9 show a loss in weight during the preservative period of more than 1 kilogram. The tendency to diminution in weight continues during the after period, as shown by the loss of 0.08 of a kilogram in weight. No. 9 only received the preservative during the period extending from

January 28 to January 31, inclusive. There is still a diminishing weight noticed during the supplementary preservative period, amounting to 0.98 of a kilogram. The general health of No. 9 is not of the best, as has already been noted, and therefore it is not altogether right to ascribe this progressive loss in weight entirely to the effect of the preservative. A part of it, or even all, may have been due to the general state of the health of the subject.

With No. 10 there is scarcely any change in weight between the fore period and the preservative period. There is, however, a considerable loss in weight in the after period (during which, however, No. 10 was ill and absent most of the time) and a gain during the supplementary preservative period. This was probably due to the natural gain after illness. The data do not warrant the assumption that the loss of weight during the after period is in any way due to the action of the preservative. The other data in this case seem to show that the preservative practically had no influence upon the body weight.

A slight loss of weight is shown in the data of No. 11 in the preservative period (during a part of which, however, he received no preservative) and this decrease still continues during the after period, and, to a less extent, during the supplementary preservative period. These data seem to indicate a tendency on the part of the preservative to diminish the body weight, but this effect may also be ascribed in part or in whole to ill health.

A marked decrease in the weight of No. 12 is shown as the result of the preservative period (but the preservative was given only two-thirds of the time) and another very marked decrease during the after period. During the supplementary period there is a slight increase in the body weight. These data seem to show a marked influence on the part of the preservative to diminish the weight, continuing also during the after period when the preservative is withdrawn. On the other hand, under the continued administration of the boric acid in the supplementary period there is a slight gain, showing either that this continued administration is neutral in its effects or that it tended to produce an increase in weight. The data in this case are not consistent, and equal consideration should be given to all the indications.

In every instance in Series II there is a loss of weight during the administration of the preservative as compared with the fore period. In every instance, also, there is a loss of weight during the after period as compared with the preservative period. In three cases during this series there is a loss of weight during the supplementary preservative period as compared with the after period. In two instances there is a gain of weight in the supplementary period. The data, therefore, of this series are contradictory, and too much consideration must not be given to data of this character. We can only apply here the rule of evidence maintained in courts of justice, namely, that where con-

tradictory evidence is given the verdict should be in harmony with the preponderance of evidence. Judged by this rule, therefore, it is concluded from the data of Series II that the administration of the preservative tends in a slight degree to diminish the body weight.

Series III.

In the case of No. 1 in Series III there is a slight diminution in weight during the preservative period and a marked increase during the after period.

The data of No. 2 exhibit an element of uncertainty, by reason of the occurrence of illness, which caused irregularity in the administration of the preservative. There is a marked loss of weight in the preservative period and a slight gain during the after period in this case.

The data for No. 3 show that there is a very slight loss of weight in the preservative period and a more marked loss during the after period.

With No. 4 there is a slight gain of weight noted during the preservative period and a marked loss during the after period.

No. 5 shows a slight gain in weight during the preservative period and a slight loss during the after period.

In No. 6 we find an irregularity introduced into the data by reason of the illness of the subject and the irregularity in the administration of the preservative. There is a very marked loss of weight in the preservative period in this case and a slight gain in the after period.

Taken as a whole, it is seen that in Series III there is a loss of weight in four cases out of six during the preservative period. There is a gain in weight in three cases during the after period. Considered collectively, therefore, it is noticed that, although in a less marked degree than in Series I, there is a tendency manifest on the part of the preservative to diminish the body weight.

Series IV.

In the case of No. 7 there is an interruption in the data by reason of the fact that at the beginning of the second preservative subperiod the subject resigned his position in the Department of Agriculture and removed from the city. The data in this case, therefore, are given only to cover from March 28 to April 1, inclusive. It is noted that during this period there is a slight increase in the weight of the body.

In the case of No. 8 there is a marked decrease in weight during the administration of the preservative, and the rate of decrease continues in the same marked manner through the after period, the change being almost 1 kilogram in the first instance and a little more than 1 kilogram in the second.

With No. 9 there is also a progressive decrease in weight, amounting to 0.72 of a kilogram during the preservative period and to 0.70 of a kilogram in the after period.

No. 10 shows a decrease of about three-fourths of a kilogram in weight in the preservative period and over eight-tenths of a kilogram during the after period.

No. 11 shows a very notable decrease in weight, amounting to 1.51 kilograms in the preservative period and a slight decrease during the after period. This was doubtless due to illness, which also occasioned the withdrawal of the preservative during five days of the preservative period.

The data for No. 12 show a loss of weight amounting to almost 0.8 of a kilogram during the preservative period, due chiefly, if not entirely, to illness, and a slight increase in weight during the after period.

In every instance in this series, excepting the incomplete data for No. 7, there is a loss of weight attending the administration of the preservative. In four cases out of five there is a continued loss of weight during the after period, and in only one case is there an increase in weight at the end of the after period.

The conclusions which can be drawn from these data are subject to the same restrictions as attach to those based upon the data of Series II. A marked variation from what might be expected is seen in the continued decrease of weight during the after period.

In a strictly logical discussion of the data in this series the progressive decrease in weight could not be attributed solely, if at all, to the action of the preservative, by reason of the fact that it is continued in all but one case after the preservative is withdrawn. When, however, the data are viewed in the light already alluded to in the previous discussion, it is seen that there is reasonable ground for belief in this series also that the administration of the preservative tends, although in only a slight degree, to decrease body weight.

Series V.

In the case of No. 1 in Series V there is a loss of nearly one-half a kilogram in the preservative period, which is nearly all regained during the after period.

The data for No. 2 show that there is a loss of about three-fourths of a kilogram in the preservative period and a much more marked loss, amounting to over 1½ kilograms, in the after period. By reason of illness No. 2 did not receive any preservative after June 11.

No. 3 shows a distinct gain in the preservative period and a return during the after period to almost exactly the weight of the fore period. The data in the case of No. 3, as will be seen, are of a contrary nature to those of No. 1.

On account of removal from the city the data in the case of No. 4 are fragmentary, being only partial for the preservative period and

none at all for the after period. The data obtained, however, show a distinct loss in weight during the administration of the preservative.

The data for No. 5 show a progressive loss of weight throughout the series, amounting to about $1\frac{1}{3}$ kilograms in the preservative period and almost $1\frac{3}{4}$ kilograms in the after period.

No. 6 shows a very great loss of weight in the preservative period, which continues during the after period.

Although to some extent contradictory, the data, as a whole, of the fifth series, when interpreted by the rule of evidence already set forth, show a distinct tendency on the part of the preservative to diminish the body weight. The fact that this tendency, in most cases, continues throughout the after period has already been elucidated. Full weight must be given to any valid objections to interpretation of data of this kind in relation to the effect of the preservative upon weight. It seems, however, that after due consideration of all these valid objections the conclusion can be established with a preponderating weight of evidence in this series that there is a marked tendency on the part of the preservative, when given in small quantities but continued over a great length of time, to diminish the body weight.

Averages of Body Weights, by Periods.

Having now discussed the influence of the preservative upon the body weights individually, it remains to bring into one expression the data of all the members, not only of each series, but for the entire time of the observation.

This summary includes the weights given in the tables, although some of them were made at times when the subjects were slightly ill and when the administration of the preservative had been suspended. Such data, however, were eliminated in the graphic representations of body weights which follow.

Beginning with Series I we find that by combining the body weights of the individuals we have the general average for the fore period of 66.61 kilograms, for the preservative period 66.05 kilograms, and for the after period 66.13 kilograms. The mean loss of weight of the subjects during the administration of the preservative is 560 grams. and the mean gain of weight during the after period is 80 grams. This summary shows that the tendency of the preservative is to decrease weight, and that this tendency is checked and a slight upward movement started during the after period.

In Series II the mean weight of the subjects during the fore period is 65.04 kilograms, during the preservative period 64.31, and during the after period 63.85. In this case the average loss for the subjects in body weight during the preservative period is 730 grams and the additional loss during the after period 460 grams. There is thus an apparent tendency during the after period to a continued loss of

weight. As has already been noted in the general discussion, this tendency is evidently due to the impairment of the health of the subjects during Series II, partly perhaps as a result of the administration of the preservative but largely due to influenza and grippe. There was a gain of weight of 750 grams during the supplementary preservative period of this experiment, during which the preservative was administered in increasing doses for a period of six days. This contradictory evidence is to be expected from the condition of the subjects during Series II.

In Series III the average weight of the body of the subjects during the fore period is 67.03 kilograms, during the preservative period 66.53, and during the after period 66.47. In this series there is a marked tendency to lose weight during the preservative period, the average loss being exactly 500 grams. During the after period there is a slight additional loss of weight, amounting to an average of 60 grams, but it is evident that the tendency to lose weight is checked by the withdrawal of the preservative.

In Series IV the average body weight of the subjects during the fore period is 64.39 kilograms, during the preservative period 63.66, and during the after period 63.16. It is seen that there is an average loss of weight during the preservative period of 730 grams, and an additional loss of 500 grams during the after period. This tendency to continued loss in weight is doubtless partly due, during the after period, to a general impairment of the health, due largely to the influence of influenza and grippe.

The average weight of the men during the fore period of Series V is 67.64 kilograms, during the preservative period 66.77, and during the after period 65.93. The mean loss of weight during the preservative period is 870 grams. This loss is continued in a marked degree also during the after period, as has already been fully noted, the mean loss during the after period amounting to 840 grams. This large mean decrease is particularly due to the condition of No. 6 and No. 5, neither of whom responded promptly to any effort toward recovery of the normal state after the withdrawal of the preservative, but continued in a poor physical state during the entire after period.

Combining the data for all the series, by periods, the following average daily weights are shown:

	Kilos.
Fore periods	66.14
Preservative periods	65.46
After periods	65.11

A general inspection of these data shows a strong tendency to a loss of weight during the administration of the preservative in each of the series. In Series I and III this tendency is checked by the withdrawal of the preservative, as indicated by the data for the after period, a

gain in weight occurring in Series I. In Series II, IV, and V there appears to be practically no tendency to check the loss of weight by reason of the withdrawal of the preservative. The general conclusion, which is based upon these data, is that the administration of borax and boric acid, in the quantities and under the conditions stated, tends to produce a slight loss of body weight. On the withdrawal of the preservative during the short after period there is, in some cases, a tendency toward recovery of normal weight, but in the majority of cases the tendency toward the loss of weight continues. These data, therefore, are capable of interpretation in different ways, in so far as respects the influence of the preservative. The most reasonable interpretation is that which has already been given in connection with a study of the individuals in the series. In this discussion the weights of the after period of Series II have been included, although, as has already been intimated, by reason of illness and irregularity, the other data for this after period are not sufficiently reliable to justify their inclusion in the general average of results.

TABLE XI.—*Average weights of subjects for Series I, III, and V.*

Period.	No. 1—J. N.	No. 2—F. C. W.	No. 3—W. S. O.	No. 4—E. C. S.	No. 5—H. C. G.	No 6—E. M. S.	Average.
Series I:	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*
Fore period (Dec. 8 to Dec. 21, 1902)	71.62	71.89	55.22	65.62	73.71	61.60	66.61
Preservative period (Dec. 22, 1902, to Jan. 3, 1903)	71.37	71.00	54.61	64.71	74.20	60.40	66.05
After period (Jan. 4 to Jan. 13, 1903)	71.64	70.87	54.73	[a]64.04	[a]75.39	60.10	66.13
Average for series	71.54	71.25	54.85	64.79	74.43	60.70	....
Series III:							
Fore period (Feb. 19 to 27, 1903)	72.89	71.74	57.03	65.62	73.71	61.21	67.03
Preservative period (Feb. 28 to Mar. 11, 1903)	72.65	70.40	56.97	65.68	73.78	59.72	66.53
After period (Mar. 12 to 19, 1903)	73.23	70.72	56.34	64.88	73.35	60.29	66.47
Average for series	72.92	70.95	56.78	65.39	73.61	60.41	......
Series V:							
Fore period (Apr. 24 to May 1, 1903)	73.81	72.23	55.66	66.15	75.87	62.13	67.64
Preservative period (May 2 to June 20, 1903)	73.38	71.50	56.18	[b]64.50	74.53	60.33	66.77
After period (June 21 to June 29, 1903)	73.74	70.18	55.63	....	72.85	58.68	65.93
Average for series	73.64	71.30	55.82	65.33	74.12	60.38	....
Average for entire experiment	72.70	71.17	55.82	65.30	73.96	60.50	....

[a] Beginning with the third series Nos. 4 and 5 were replaced with other men. Data are calculated back on variations of original Nos. 4 and 5.

[b] No weights for this man after May 27.

TABLE XII.—*Average weights of subjects for Series II and IV.*

Period.	No. 7—E. R. M.	No. 8—J. H. E.	No. 9—A. G.	No. 10—W. J. J.	No. 11—J. S. C.	No. 12—B. J. T.	Average.
Series II:	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos.*	*Kilos*
Fore period (Jan. 19 to Jan. 27, 1903)	56.41	66.77	70.40	67.94	66.40	62.33	65.04
Preservative period (Jan. 28 to Feb. 10, 1903)	56.10	65.36	68.77	67.85	66.05	61.73	64.31
After period (Feb. 11 to Feb. 15, 1903)	55.72	65.32	68.69	[a] 67.30	65.64	60.40	63.85
Average for series	56.04	65.82	69.29	67.70	66.02	61.49	....
Supplementary preservative period (Feb. 16 to Feb. 21, 1903)[b]	....	64.65	[c] 67.71	[d] 67.66	65.44	60.59	64.60
Series IV:							
Fore period (Mar. 20 to Mar. 27, 1903)	55.18	64.71	70.40	67.56	67.08	61.43	64.39
Preservative period (Mar. 28 to Apr. 14, 1903)	[e] 55.36	63.88	69.68	66.80	65.57	60.64	63.66
After period (Apr. 15 to Apr. 22, 1903)	....	62.74	68.98	65.96	65.18	60.76	63.16
Average for series	55.27	63.78	69.69	66.77	65.94	60.94	....
Average for entire experiment	55.68	64.75	70.00	67.38	65.80	61.01	....

[a] Weighed only on two days.
[b] No weights taken for No. 7.
[c] Beginning with the fourth series, No. 9 was replaced with another man. Data calculated back on variations of original No. 9.
[d] No. 10 received no preservative in the supplementary series, and his weight should not enter into the average.
[e] No. 7 dropped out of experiment on April 1.

GRAPHIC REPRESENTATION.

It seems that a better illustration of the actual changes in weight produced during the continuation of the experimental work can be secured graphically. To this end the daily variations have been platted in the accompanying charts (figs. 2–7), and the mean weights for each of the periods of each series have been determined. This has been done for each individual under observation and also for each series of observations as a whole. Finally, the means of all the series have been combined into a general expression representing the means of the entire experiment. The data which have been used in calculating these graphic lines are not exactly the same as those which have just been discussed in connection with the variation in weights. There have been excluded from the graphic illustration all the data which in themselves were not reasonably complete. In each series only those members of the table have been compared whose weights were taken throughout the entire series, including the fore, preservative, and after periods. For this reason the data as a whole for Series II are excluded because in no instance in these cases was there any individual who completed entirely the whole series. In the case of Series I the data are complete for all members. In the case of Series III the data are complete for four members only. In the case of Series II the data are not complete for any one person, but the graphic representation of the variations in weight is given for the fore period and the preservative period. These data are, however, not used in any of the

summaries. In the case of Series IV the data for weights are complete only in three instances. In Series V there are only three complete sets of data extending over the whole period. In each case the summary for each series includes only those individual data which are complete for the whole series. The daily variations in each case are represented by the broken line. The figures given on the left-hand side of the chart are the weights in kilograms, while those across the top are the days of the month. The weight for each day is marked

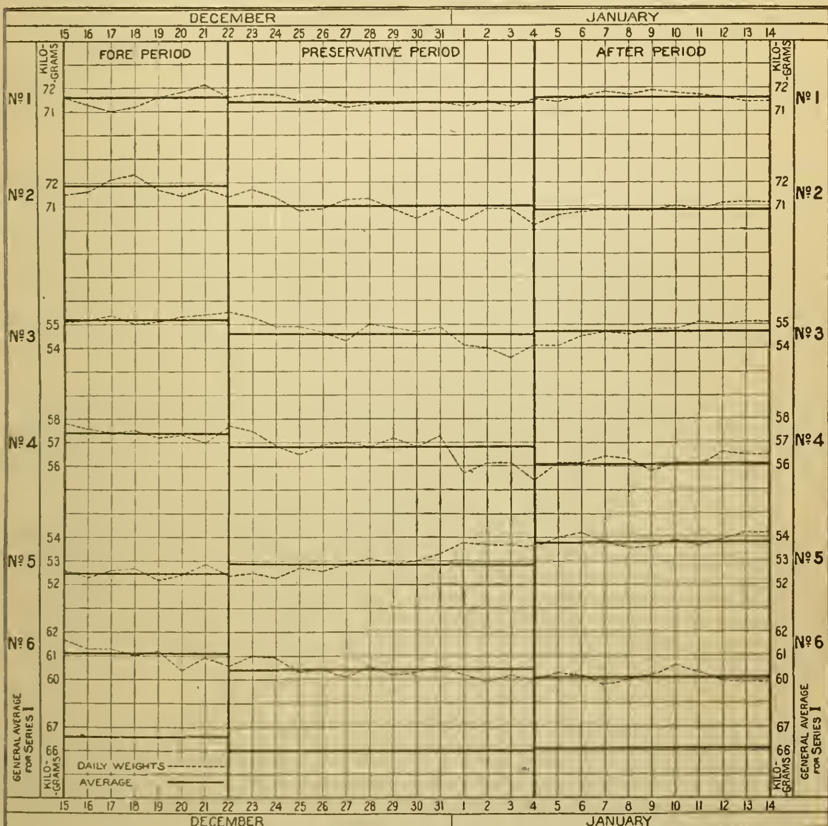

FIG. 2.—Daily and average body weights for Series I.

on the vertical line for that day. The number of days, therefore, in each period of the series is represented by the number of spaces included between the vertical lines. Each horizontal line represents 1 kilogram of weight.

In order that a more definite representation of the total variation between the different periods of the series might be brought out, a heavy dark line representing the mean of the variations shown by the broken line has been inserted.

Studying now the individual data of Series I (fig. 2) it is seen at once that there is a slight decrease in the weight of No. 1 during the preservative period, while during the after period the increase in weight is almost exactly equivalent to the loss during the preservative period, so that the mean weight for the after period is the same as that for the fore period.

In the case of No. 2 there is a loss of almost a kilogram in weight during the preservative period, and an additional loss of about 200 grams during the after period.

In the case of No. 3 a marked loss is shown during the preservative period, which is partly regained during the after period.

In the case of No. 4 there is a progressive loss from the fore period to the after period, inclusive.

In the case of No. 5 we have the exact reversal of the data for No. 4. There is in this case a progressive gain. A later investigation showed

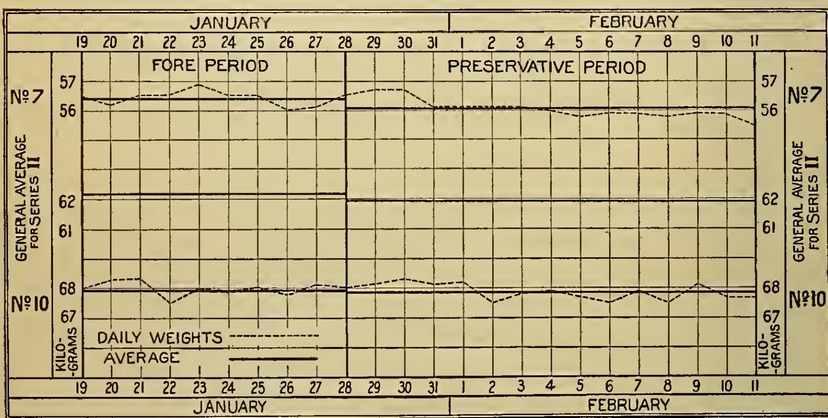

FIG. 3.—Daily and average body weights for Series II.

that No. 5 was probably not receiving full and nutritious rations at the beginning of the experimental work. He lived in somewhat restricted surroundings and apparently without the abundant supplies of food which are usually found at the disposal of young men. This fact in the inVironment is an important one in the consideration of this progressive increase in weight in his case.

In the case of No. 6 there is a progressive loss of weight extending through the whole series.

Collecting all the expressions of Series I into a common graphic representation it is seen that there is a considerable loss of weight attending the administration of the preservative, and that this loss is partly restored during the after period. If we should exclude, however, the data of No. 5 it is evident that there would still have been a loss of weight during the after period.

In Series III (fig. 4) we find in the case of No. 1 a slight loss of weight during the administration of the preservative, which is, however, more than regained during the after period.

In the case of No. 3 there is a very slight decrease of weight during the preservative period, amounting only to a few grams. There is, however, a very marked loss of weight manifested during the after period.

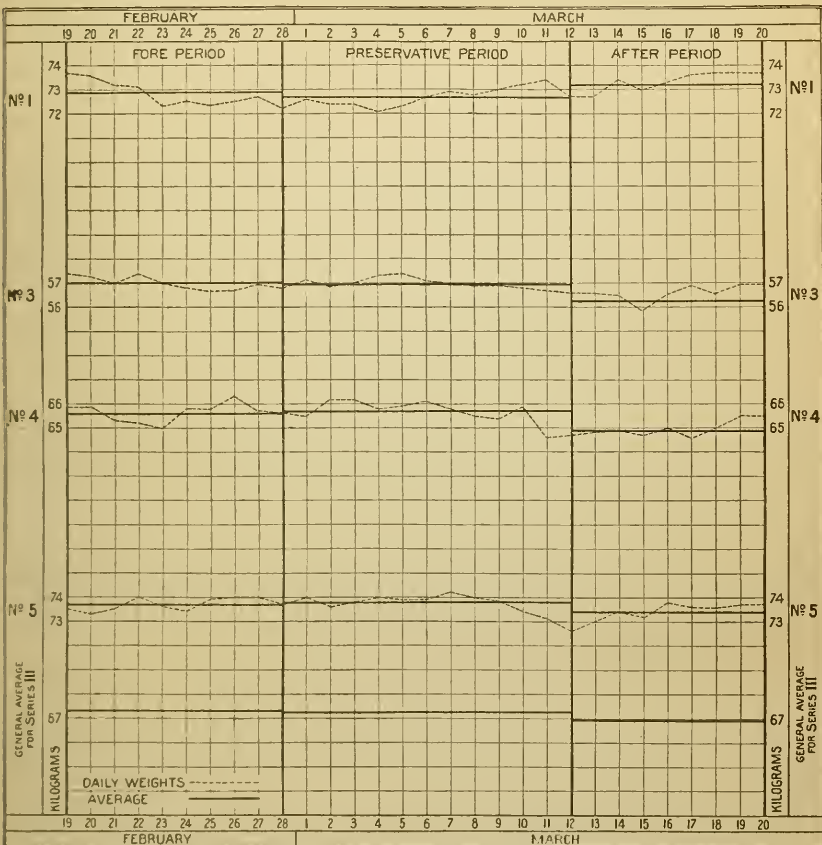

FIG. 4.—Daily and average body weights for Series III.

The case of No. 4 is somewhat anomalous. There is a very slight increase of weight shown in this instance during the preservative period, while a quite distinct loss takes place in the after period.

No. 5 also shows a very slight increase in weight during the preservative period, but during the after period this is more than offset by a decrease of about 400 grams.

Combining the four expressions of Series III we note a very slight loss of weight during the preservative period—a loss, in fact, almost

inappreciable—and a slightly increased loss during the after period. The weights, however, in all four instances when brought together in a general expression show but little change during the progress of the experiment.

In the case of Series IV, No. 8, there is a marked loss of weight during the preservative period and a somewhat greater loss during the after period. (See fig. 5.)

In the case of No. 9 the same observation may be made, though the losses are not so great as in the case above mentioned. No. 10 also shows a regularly graded loss, it being almost the same in the after period as in the preservative period.

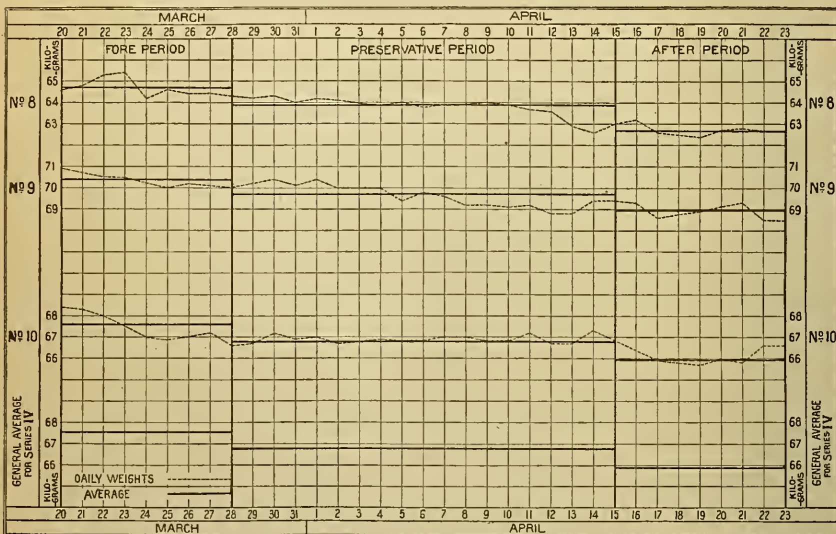

Fig. 5.—Daily and average body weights for Series IV.

Combining the three expressions into one we find a progressive loss of weight, being almost exactly the same in the after period as in the preservative period.

In the case of Series V (fig. 6) the preservative period extended over a space of fifty days. The vertical lines, therefore, in this chart represent two days instead of one through all the periods of the series.

In the case of No. 1, Series V, there is a slight loss of weight shown during the preservative period, which is almost exactly regained during the after period.

In the case of No. 3 contrary data are shown. There is a slight increase of weight during the preservative period, which disappears entirely during the after period.

In the case of No. 5 there is a very marked loss of weight during the preservative period and an equally marked additional loss during the after period.

Combining the three expressions of Series V into one, we find a slight loss of weight during the preservative period and an additional slightly greater loss of weight during the after period.

It now remains to combine into a single expression the average weights, by periods, for all the series. The length of the line for each period merely approximates the usual length of that period.

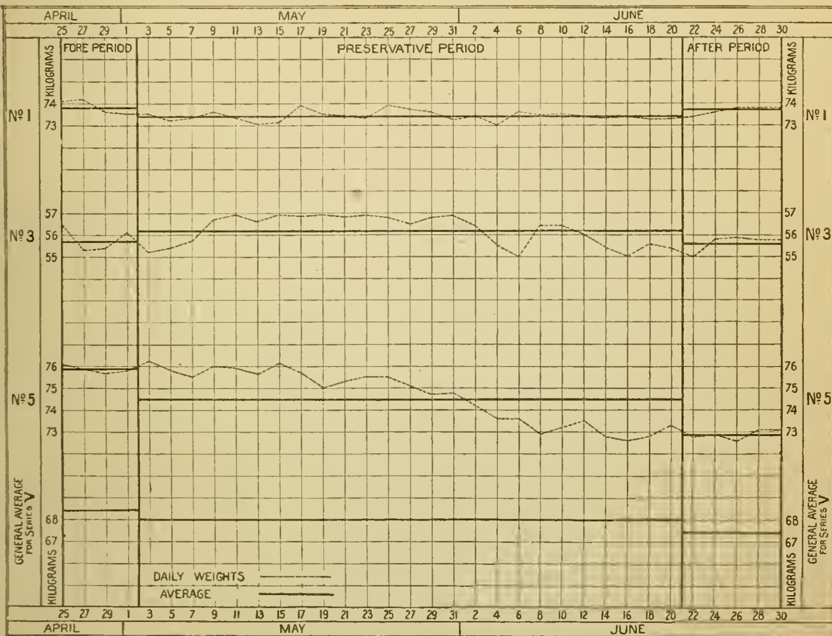

FIG. 6.—Daily and average body weights for Series V.

Studying now the expressions as a whole for Series I, III, IV, and V (fig. 7) it is seen that there is a loss of weight amounting to about 500 grams during the preservative periods and an additional loss of weight amounting to about 400 grams for the after periods. The evidence, therefore, which is thus accumulated throughout the whole series of

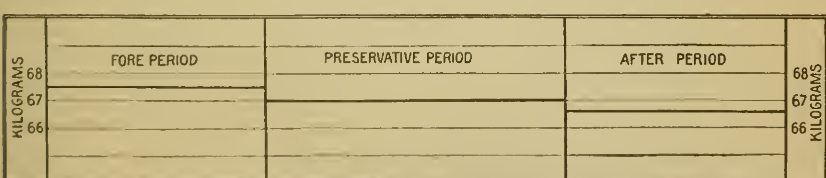

FIG. 7.—General average of body weights for entire experiment, including Series I, III, IV, and V.

observations appears reasonably convincing and shows that the use of borax and boric acid in the quantities and in the manner described tends to produce a slight decrease in the weight of the body. This tendency to decrease is also a continuing one, in so far as the period of

about ten days immediately following the cessation of the administration of the preservative is concerned. This is not a matter of surprise when it is remembered that it requires from three to five days or longer after the administration ceases to eliminate the boric acid which has been accumulated in the system. Further than this, the conditions produced by the administration of the preservative which have caused the loss of weight are not at once removed. For these reasons the failure to regain the lost weight during the after period can not be cited as satisfactory evidence to show that the loss of weight during the preservative period was not due to the administration of the preservative in question. On the other hand, the continued loss of weight during this brief after period appears to be strong corroborative testimony showing the tendency of the preservative to reduce the weight of the body. Nor should the fact that there are many contradictory data established in the course of the observations be cited as a reason for diminished confidence in the general results. The character of the environment which almost necessarily produces these discordant data has been sufficiently set forth. It therefore appears to be justifiable to accept these general expressions of the average data as reasonably correct and sufficiently established to warrant the conclusion derived therefrom. The further fact that the losses in weight which are noted are much less than those which have been pointed out by some other observers should not be allowed to throw discredit upon the general value of the work. The conditions of experiment vary so in different countries and with different experimenters that the reaching of results of different magnitude or even of results of opposite character should not cast discredit upon the investigation.

RATIO OF FOOD WEIGHT TO BODY WEIGHT.

The weight of food consumed during each day and its ratio to the weight of the body form one factor in determining the effect of any added preservative upon the digestion. This index alone would be of little value, but taken in connection with the others which have been obtained it is useful. This ratio is also of interest in connection with the general subject of nutrition, as determining the quantity of food consumed in proportion to the weight of the body, apart from the effect of the preservative.

Table XIII gives the quantities of food consumed by Nos. 1 to 6, inclusive, the subjects under examination during the fore period of Series I, from December 8 to December 22, 1902. The daily weight of each food is given in detail, the average of each kind of food for the period, and the ratio for each kind of food for the period under observation. The total weight of food consumed for the period is also given in each case, as well as the ratio of that weight to the average weight of the body for the time covered. The ratio in each

case is determined by dividing the weight of the food eaten by the weight of the body; for convenience in comparison this ratio is multiplied by 100 (thus becoming a percentage). The table gives in sufficient detail the ratios of the different kinds of food used, while for the purposes of comparison the ratio of the total weight of food to the weight of the body, as indicated above, is determined. It will not be necessary to go extensively into detail, inasmuch as Table XIII itself will give all the particulars that are necessary. For illustration, however, it may be well enough to call attention to the summary in the case of No. 1 for the fore period of the first series.

The average weight of No. 1 for the entire fore period is 71.62 kilos. He ate an average of 285 grams of soup per day. The total weight of soup consumed during the fourteen days was 3,984 grams, which is 5.56 per cent of his average weight. Of fish, eaten only on five days, the average quantity consumed is 110 grams, the total weight consumed 547 grams, which is 0.763 per cent of the total weight of the body. The average quantity of meat consumed each day is 148 grams, the total amount consumed 1,879 grams, equivalent to 2.63 per cent of the weight of the body. The average daily consumption of vegetables is 310.2 grams, the total quantity consumed 4,342.5 grams, equivalent to 6.07 per cent of the weight of the body. The average quantity of breakfast cereals consumed is 217 grams, the total quantity consumed 3,049 grams, equivalent to 4.26 per cent of the weight of the body. The average quantity of bread consumed is 280 grams, total quantity consumed 3,922 grams, equivalent to 5.47 per cent of the weight of the body. The average quantity of butter consumed is 48 grams, total quantity 669 grams, equivalent to 0.933 per cent of the weight of the body. The average quantity of sugar consumed is 52.6 grams, total quantity 736 grams, equivalent to 1.028 per cent of the weight of the body. The average quantity of water consumed is 245 grams, total 1,470 grams, equivalent to 2.052 per cent of the weight of the body. The average quantity of milk consumed is 1,324 grams, total quantity consumed 18,542 grams, equivalent to 25.89 per cent of the weight of the body. The average quantity of dessert consumed is 184 grams, total quantity 2,571 grams, equivalent to 3.59 per cent of the weight of the body. The total weight of food consumed during the fourteen days is 41,766.5 grams, equivalent to 58.31 per cent of the weight of the body, or per day 4.17 per cent of the weight of the body.

The other data of the table will not be described in detail, except to call attention to the general daily averages. In the case of No. 2 the food daily consumed is 3.98 per cent of the weight of the body; in the case of No. 3, 5.33 per cent; in the case of No. 4, 5.29 per cent; in the case of No. 5, 4.73 per cent, and in the case of No. 6, 3.41 per cent.

In Tables XIV, XV, and XVI will be found similar details for the preservative subperiods and in Table XVII the figures for the after

period. From the data given in these tables are obtained the average ratios for each of these periods and for the whole of Series I, as follows:

	Per cent.
Fore period	4.20
Preservative period	4.22
After period	4.21
Average for series	4.21

It would be interesting to give the data of this nature for the other series, but it is thought that those which are here submitted are sufficient for illustration and that it is not necessary to take further space to record these daily observations.

The general average given above shows a consumption of food each day on the part of the individuals under observation during the periods covered by the first series, including thirty-six days, equivalent to 4.21 per cent of the daily weight of their bodies. The greater part of the food weight consists in the coffee, milk, and water consumed and in the water present in the solid foods. It is interesting to know, however, about what weight of food is taken into the stomach daily, and these data fully illustrate that point. If we assume that the average healthy young man eats an amount of food equivalent to 4.21 per cent of his own weight each day, it is seen that it would require nearly twenty-four days for him to eat a weight of food equivalent to the weight of his body.

TABLE XIII.—*Ratio of food weight to body weight in the fore period of Series I.*

No. 1—J. N.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 8	71.22	100	81	302	319.5	188	280	51	26.5	...	...	...	1,342	230
9	71.98	307	...	248	391.0	234	323	43	53.0	...	...	...	1,858	202
10	72.11	360	...	161	220.0	109	295	49	55.0	135	...	...	1,620	319
11	71.52	310	...	141	353.0	215	227	46	26.5	200	...	...	1,342	177
12	71.77	380	99	81	181.0	150	294	45	33.0	375	...	...	1,238	210
13	71.60	334	...	135	301.0	253	266	45	77.0	200	...	...	1,238	271
14	71.82	284	152	121	362.0	150	254	45	37.5	...	...	...	1,238	197
15	71.61	307	...	116	305.0	150	259	45	14.0	360	...	...	1,238	152
16	71.26	262	...	161	401.0	150	251	45	66.0	...	...	...	1,238	97
17	71.04	199	...	120	392.0	150	257	45	53.0	...	...	...	1,238	101
18	71.20	223	...	117	253.0	250	301	60	70.5	...	...	...	1,238	80
19	71.63	206	137	...	232.0	250	285	45	55.0	200	...	...	1,238	170
20	71.80	210	...	96	250.0	250	306	60	61.0	...	...	...	1,238	195
21	72.09	202	78	80	382.0	250	324	45	75.0	...	...	...	1,238	170
Average	71.62	285	110	148	310.2	217	280	48	52.6	245	...	...	1,324	181
Total	...	3,984	547	1,879	4,342.5	3,049	3,922	669	736.0	1,470	...	...	18,542	2,571
Ratio (percentage)	...	5.56	0.763	2.63	6.07	4.26	5.47	0.933	1.028	2.052	...	...	25.89	3.59

Total weight of food ....grams.. 41,766.5
Total ratio of food weight to body weight ....per cent.. 58.31
Daily average ratio of food weight to body weight ....do.... 4.17

TABLE XIII.—*Ratio of food weight to body weight in the fore period of Series 1*—Continued.

No. 2—F. C. W.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 8	72.02	300	83	231	128	188	271	49	53	200	....	....	1,032	198
9	72.05	300	....	170	333	180	388	41	102	....	....	....	619	150
10	72.67	392	....	191	220	418	274	46	88	600	....	....	929	303
11	72.42	310	....	163	317	226	235	45	44	500	....	....	1,032	186
12	72.26	190	92	85	179	150	279	45	99	700	....	....	1,238	108
13	72.03	294	....	177	276	150	245	45	....	400	....	....	826	99
14	70.91	285	71	110	357	150	235	50	55	200	....	....	826	221
15	71.46	210	....	123	300	150	234	45	77	900	....	....	1,032	149
16	71.56	262	....	138	404	150	277	45	88	600	....	....	1,032	118
17	72.09	199	....	121	396	150	277	45	77	600	....	....	1,032	95
18	72.29	223	....	152	291	150	278	45	88	400	....	....	1,032	80
19	71.65	206	183	....	261	150	270	45	110	200	....	....	1,032	170
20	71.41	210	....	142	250	150	279	60	66	300	....	....	1,032	190
21	71.68	202	120	80	240	150	300	45	121	300	....	....	1,238	92
Average	71.89	256	110	145	282	179	274	47	82	446	....	....	995	154
Total	....	3,583	548	1,883	3,952	2,512	3,842	651	1,068	5,900	....	....	13,932	2,159
Ratio (percentage)	....	4.98	0.763	2.61	5.50	3.49	5.34	0.906	1.486	8.21	....	....	19.38	3.01

Total weight of food ....grams.. 40,030
Total ratio of food weight to body weight..........per cent.. 55.68
Daily average ratio of food weight to body weight..........do.... 3.98

No. 3—W. S. O.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 8	54.94	400	80	282	182	188	325	59	53.0	....	....	150	619	217
9	55.16	300	....	235	346	141	392	38	82.5	200	150	300	260	344
10	55.09	378	....	65	220	306	462	66	110.0	200	....	495	439	148
11	55.22	300	....	141	346	195	394	45	97.0	....	165	320	589	189
12	55.28	190	95	93	228	150	404	77	77.0	300	....	320	698	90
13	55.40	268	....	139	292	150	432	45	121.0	600	150	310	450	269
14	55.48	284	140	105	391	150	340	48	81.5	400	....	320	619	179
15	55.10	333	....	134	282	150	349	45	88.0	....	....	320	764	204
16	55.20	262	....	134	399	150	454	45	99.0	600	160	310	529	118

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vege-tables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
17	55.41	199	....	133	338	150	389	60	124.0	600	160	320	635	154
18	55.01	223	....	155	291	150	447	45	88.0	600	150	310	619	80
19	55.05	206	180	....	279	150	367	30	77.0	400	150	310	826	170
20	55.34	210	....	155	250	150	455	60	121.0	....	150	315	826	298
21	55.10	201	115	80	382	150	378	30	90.0	....	160	320	400	310
Average	55.22	268	125	111	302	166	398	50	94.0	433	155	316	591	198
Total	....	3,751	610	1,851	4,226	2,330	5,578	693	1,309.0	3,900	1,395	4,420	8,273	2,770
Ratio (percentage)	....	6.80	1.104	3.35	7.65	4.22	10.12	1.255	2.37	7.06	2.522	8.00	14.98	5.01

Total weight of food ....grams.. 41,181
Total ratio of food weight to body weight ....per cent.. 74.58
Daily average ratio of food weight to body weight ....do.... 5.33

No. 4—W. L. D.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vege-tables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 8	57.55	300	95	268	195	188	274	68	26.5	500	....	....	1,311	219
9	57.80	200	....	69	318	120	328	59	27.0	200	....	....	1,238	200
10	57.70	342	....	93	220	298	296	51	13.0	550	....	....	1,032	319
11	57.75	221	....	148	153	164	205	60	13.0	700	....	....	1,262	174
12	58.00	190	99	96	174	150	262	60	13.0	....	....	....	1,238	109
13	57.80	180	....	145	186	150	240	45	13.0	500	....	....	1,238	169
14	57.60	200	132	98	307	150	275	45	13.0	....	....	....	1,238	193
15	57.75	210	....	115	222	150	227	75	....	400	....	....	1,238	155
16	57.60	262	....	116	306	150	282	75	26.0	300	....	....	1,238	118
17	57.35	199	....	126	411	150	239	75	13.0	400	....	....	1,238	91
18	57.50	223	....	158	248	150	222	75	13.0	600	....	....	1,238	80
19	57.20	200	184	....	183	150	227	75	26.0	400	....	....	1,058	170
20	57.30	210	....	129	250	150	174	83	13.0	600	....	....	784	293
21	57.00	202	175	80	256	150	136	53	15.0	400	....	....	413	170
Average	57.57	224	137	124	245	162	242	64	16.8	163	....	....	1,128	176
Total	....	3,139	685	1,641	3,429	2,270	3,387	899	224.5	5,550	....	....	15,794	2,460
Ratio (percentage)	....	5.45	1.173	2.85	5.96	3.94	5.89	1.562	0.390	9.64	....	....	27.43	4.28

Total weight of food ....grams.. 40,602
Total ratio of food weight to body weight ....per cent.. 74.07
Daily average ratio of food weight to body weight ....do.... 5.29

TABLE XIII.—*Ratio of food weight to body weight in the fore period of Series I*—Continued.

No. 5—R. V. F.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 8	51.70	275	83	254	198	188	214.0	49	26.5	300	.....	.....	1,238	145
9	52.72	200	.....	301	330	149	321.0	43	26.5	800	.....	.....	826	214
10	52.65	421	.....	105	220	476	251.4	47	44.0	400	.....	.....	826	287
11	52.78	300	.....	113	268	349	281.0	45	22.0	900	.....	.....	619	198
12	53.35	380	95	88	179	150	304.0	60	22.0	500	.....	.....	1,238	198
13	53.07	325	.....	157	291	150	239.0	45	33.0	500	.....	.....	1,032	186
14	52.80	303	125	81	348	150	237.0	45	22.0	500	.....	.....	1,032	191
15	52.60	296	.....	84	226	235	239.0	45	33.0	300	.....	.....	1,238	201
16	52.30	262	.....	50	372	250	258.0	45	33.0	.....	.....	.....	1,238	118
17	52.59	199	.....	40	330	250	297.0	45	22.0	200	.....	.....	898	149
18	52.69	223	.....	83	259	250	304.0	45	22.0	200	.....	.....	1,032	80
19	52.22	206	90	.....	199	250	272.0	45	33.0	200	.....	.....	1,238	170
20	52.38	210	.....	60	250	250	267.0	45	44.0	200	.....	.....	1,238	200
21	52.91	202	68	80	382	250	300.0	45	33.0	75	.....	.....	1,238	170
Average	52.63	272	92	115	275	239	270.3	46	30.0	390	.....	.....	1,067	179
Total	.....	3,802	461	1,496	3,852	3,347	3,784.4	649	416.0	5,075	.....	.....	14,931	2,507
Ratio (percentage)	.....	7.22	0.876	2.836	7.32	6.36	7.19	1.234	0.791	9.64	.....	.....	28.38	4.76

Total weight of food .... grams.. 24,864
Total ratio of food weight to body weight .... per cent.. 66.26
Daily average ratio of food weight to body weight .... do.... 4.73

No. 6—L. M. S.[a]

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 8	63.30	200	.....	179	185	188	265	56.0	53	200	150	450	62	219
9	62.20	200	.....	109	295	149	308	38.5	62	.....	150	450	222	186
10	61.60	179	.....	98	.....	436	240	64.0	89	150	160	319	119	305
11	61.95	300	.....	156	300	209	285	45.0	88	250	160	460	366	207
12	61.73	190	71	93	91	150	264	45.0	97	.....	150	450	87	219
13	61.78	129	.....	131	258	150	279	30.0	77	100	150	300	216	199
14	.....	200	70	99	369	150	159	30.0	86	150	150	450	70	187
15	61.67	210	.....	103	181	150	249	45.0	41	150	150	450	114	138
16	61.30	262	.....	128	294	.....	274	45.0	90	75	150	300	299	117

17	61.30	199	....	129	333	150	287	15.0	31	175	150	150	431	115
18	61.00	223	....	161	251	150	280	52.5	62	400	150	300	68	88
19	61.15	206	178	....	151	150	272	45.0	77	400	150	310	77	185
20	60.35	210	....	60	160	....	216	30.0	33	....	150	310	34	203
21	60.90	202	115	80	240	150	306	52.5	69	....	150	300	51	170
Average	61.60	208	109	117	238	182	265	44.5	68	205	151	257	158	181
Total	....	2,910	431	1,526	3,108	2,182	3,714	623.5	955	2,050	2,120	4,999	2,216	2,538
Ratio (percentage)	....	4.72	0.707	2.17	5.05	3.54	6.03	1.012	1.549	3.33	1.72	8.09	3.60	4.11

Total weight of food........................grams.. 29,418.5
Total ratio of food weight to body weight........................per cent.. 47.75
Daily average ratio of food weight to body weight........................do.... 3.41

[a] No. 6 was absent from one meal (breakfast, Dec. 20); therefore the results are not, strictly speaking, comparable.

TABLE XIV.—*Ratio of food weight to body weight in the first preservative subperiod of Series I.*

No. 1—J. N.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22	71.64	209	....	120	270	250	300	45	48.5	....	....	....	1,238	....	200
23	71.69	213	....	120	210	250	300	45	48.5	....	....	....	1,238	....	165
24	71.67	205	....	120	270	....	280	45	48.5	....	....	....	1,238	....	192
25	71.40	220	....	120	250	250	300	45	37.5	....	....	....	1,238	40	70
26	71.53	201	130	....	300	250	300	45	64.0	....	....	....	1,238	....	175
Average	71.59	210	130	120	266	250	296	45	49.4	....	....	....	1,238	40	160
Total	....	1,048	130	480	1,330	1,000	1,480	225	217.0	....	....	....	6,190	40	802
Ratio (percentage)	....	1.46	.182	.671	1.86	1.40	2.07	.314	.345	....	....	....	8.65	.056	1.12

Total weight of food........................grams.. 12,972
Total ratio of food weight to body weight........................per cent.. 18.12
Daily average ratio of food weight to body weight........................do.... 3.62

TABLE XIV.—*Ratio of food weight to body weight in the first preservative subperiod of Series I*—Continued.

No. 2—F. C. W.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22	71.41	209	....	160	330	150	263	45	88.5	900	....	....	1,238	....	200
23	71.66	213	....	160	290	150	258	45	81.5	400	....	....	1,032	....	165
24	71.40	205	....	150	320	150	300	45	55.0	350	....	....	1,032	....	92
25	70.80	220	....	160	300	150	250	45	33.0	650	....	....	619	40	170
26	70.90	201	166	....	350	100	263	45	77.0	500	....	....	1,032	....	175
Average	71.23	209	166	158	318	140	267	45	67.0	560	....	....	991	40	160
Total	....	1,048	166	630	1,590	700	1,334	225	335.0	2,800	....	....	4,953	40	802
Ratio (percentage)	....	1.47	.233	.884	2.23	.982	1.87	.315	4.70	3.93	....	....	6.95	.056	1.12

Total weight of food .... grams.. 14,623
Total ratio of food weight to body weight .... per cent.. 20.52
Daily average ratio of food weight to body weight .... do.... 4.10

No. 3—W. S. O.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22	55.45	209	....	160	270	150	340	30	45	....	....	320	929	....	200
23	55.25	213	....	160	265	150	375	45	105	....	160	320	619	....	65
24	54.90	205	....	150	295	150	365	30	81	400	155	160	413	....	290
25	54.85	220	....	160	250	150	360	30	55	500	160	325	206	40	170
26	54.68	201	170	....	300	150	316	15	99	....	160	160	319	....	170
Average	55.03	210	170	158	276	150	351	30	77	450	159	257	497	40	179
Total	....	1,048	170	630	1,380	750	1,756	150	385	900	635	1,285	2,486	40	895
Ratio (percentage)	....	1.94	.309	1.14	2.51	1.36	3.19	.272	.699	1.63	1.15	2.33	4.51	.073	1.62

Total weight of food .... grams.. 12,510
Total ratio of food weight to body weight .... per cent.. 17.56
Daily average ratio of food weight to body weight .... do.... 3.51

No. 1—W. L. D.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22	57.65	209	....	160	241	150	183	60	13	700	....	....	1,238	....	200
23	57.50	213	....	160	185	150	265	76	26	400	....	....	826	....	165
24	56.85	205	....	150	270	150	175	60	....	800	....	....	1,238	....	195
25	56.50	220	....	160	200	150	86	30	13	100	....	....	1,238	110	170
26	56.90	201	170	....	250	150	210	76	30	300	....	....	1,238	....	100
Average	57.08	209	170	158	230	150	190	60	20	520	....	....	1,156	110	166
Total	....	1,048	170	630	1,150	750	949	302	82	2,600	....	....	5,778	110	830
Ratio (percentage)	....	1.83	.298	1.10	2.01	1.31	1.66	.529	.143	4.55	....	....	10.10	.192	1.45

Total weight of food ....grams.. 14,399
Total ratio of food weight to body weight ....per cent.. 25.23
Daily average ratio of food weight to body weight ....do.... 5.05

No. 5—R. V. F.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22	52.42	209	....	80	270	250	300	45	44	....	....	....	826	....	200
23	52.45	213	....	120	240	250	300	45	33	200	....	....	1,238	....	165
24	52.27	205	....	80	270	250	300	45	33	....	....	....	1,238	....	192
25	52.65	220	....	120	200	250	254	45	22	75	....	....	1,032	40	170
26	52.64	201	90	....	250	250	290	45	33	....	....	....	1,238	....	175
Average	52.49	210	90	100	246	250	289	45	33	138	....	....	1,114	40	180
Total	....	1,048	90	400	1,230	1,250	1,444	225	165	275	....	....	5,572	40	902
Ratio (percentage)	....	1.99	.171	.762	2.34	2.38	2.75	.429	.314	.524	....	....	10.60	.076	1.71

Total weight of food ....grams.. 12,641
Total ratio of food weight to body weight ....per cent.. 24.08
Daily average ratio of food weight to body weight ....do.... 4.82

TABLE XIV.—*Ratio of food weight to body weight in the first preservative subperiod of Series I*—Continued.

No. 6—L. M. S.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 22	60.60	209	....	160	200	....	340	60	65	225	150	300	72	....	200
23	61.00	213	....	160	240	....	300	52	78	....	150	300	111	....	165
24	60.90	205	....	80	200	....	300	45	73	375	150	450	60	....	192
25	60.82	220	....	160	200	150	300	45	55	300	150	150	8	40	180
26	60.42	201	170	....	200	150	300	45	86	200	150	450	45	....	175
Average	60.75	210	170	140	208	150	308	49	71	275	150	330	59	40	182
Total	....	1,048	170	560	1,040	300	1,540	247	357	1,100	750	1,650	296	40	912
Ratio (percentage)	....	1.72	.279	.922	1.71	.493	2.53	.406	.587	1.81	1.23	2.71	.487	.066	1.50

Total weight of food .... grams.. 10,010
Total ratio of food weight to body weight .... per cent.. 16.48
Daily average ratio of food weight to body weight .... do.... 3.30

TABLE XV.—*Ratio of food weight to body weight in the second preservative subperiod of Series I.*

No. 1—J. N.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 27	71.15	205	....	120	325	250	300	45	59.5	....	....	....	1,238	....	175
28	71.25	205	57	80	395	250	300	45	48.5	....	....	....	1,238	....	204
29	71.25	201	....	120	300	250	300	45	48.5	....	....	....	1,238	....	200
30	71.40	209	....	120	320	250	300	45	37.5	....	....	....	1,238	....	194
Average	71.26	205	57	110	348	250	300	45	48.5	....	....	....	1,238	....	193
Total	....	820	57	440	1,390	1,000	1,200	180	194.0	....	....	....	4,952	....	773
Ratio (percentage)	....	1.15	.080	.617	1.95	1.40	1.68	.252	.272	....	....	....	6.95	....	1.08

Total weight of food .... grams.. 11,006
Total ratio of food weight to body weight .... per cent.. 15.44
Daily average ratio of food weight to body weight .... do.... 3.86

No. 2—F. C. W.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 27	71.25	205	....	160	400	150	247	45	66	600	....	....	826	....	175
28	71.25	205	80	80	445	150	253	45	44	400	....	....	1,032	....	204
29	70.90	201	....	160	350	150	272	45	55	600	....	....	1,032	....	200
30	70.50	209	....	160	370	150	266	45	44	650	....	....	825	....	194
Average	70.98	205	80	140	391	150	260	45	52	563	....	....	921	....	193
Total	....	820	80	560	1,565	600	1,038	180	209	2,250	....	....	3,685	....	773
Ratio (percentage)	....	1.15	.112	.789	2.20	.845	1.46	.253	.291	3.17	....	....	5.19	....	1.09

Total weight of food ....grams.. 11,760
Total ratio of food weight to body weight....................per cent.. 16.57
Daily average ratio of food weight to body weight....................do.... 4.14

No. 3—W. S. O.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 27	54.32	205	....	160	325	150	318	30	66	600	160	320	367	....	175
28	54.95	205	80	80	390	....	326	45	55	200	160	320	619	....	204
29	54.89	201	....	160	275	150	360	45	55	200	160	160	619	....	200
30	54.70	209	....	160	295	150	317	45	88	....	160	160	421	....	194
Average	54.72	205	80	140	321	150	330	31	61	333	160	210	507	....	193
Total	....	820	80	560	1,285	450	1,321	165	264	1,000	640	960	2,026	....	773
Ratio (percentage)	....	1.41	.146	1.02	2.35	.822	2.41	.302	.482	1.83	1.17	1.75	3.70	....	1.41

Total weight of food....................grams.. 10,344
Total ratio of food weight to body weight....................per cent.. 18.90
Daily average ratio of food weight to body weight....................do.... 4.73

TABLE XV.—*Ratio of food weight to body weight in the second preservative subperiod of Series I*—Continued.

No. 4—W. L. D.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 27	56.95	205	....	160	300	150	181	53	13	700	....	....	1,238	....	175
28	56.75	205	80	80	345	150	150	60	13	400	....	....	1,238	....	204
29	57.20	201	....	160	250	150	200	60	26	400	....	....	1,238	....	200
30	56.80	209	....	160	200	150	157	60	13	500	....	....	1,238	....	194
Average	56.93	205	80	140	274	150	172	58	16	500	....	....	1,238	....	193
Total	....	820	80	560	1,095	600	688	233	65	2,000	....	....	4,952	....	773
Ratio (percentage)	....	1.44	.140	.984	1.90	1.05	1.21	.409	.114	3.51	....	....	8.69	....	1.36

Total weight of food ....grams.. 11,866
Total ratio of food weight to body weight........................per cent.. 20.84
Daily average ratio of food weight to body weight........................do.... 5.21

No. 5—R. V. F.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 27	52.87	205	....	80	300	250	300	45	48	200	....	....	1,238	....	175
28	53.05	205	45	80	345	250	268	45	22	100	....	....	1,238	....	201
29	52.90	201	....	120	250	250	300	45	44	175	....	....	1,238	....	200
30	53.03	209	....	120	270	250	300	45	22	....	....	....	1,238	....	194
Average	52.96	205	45	100	291	250	292	45	34	119	....	....	1,238	....	193
Total	....	820	45	400	1,165	1,000	1,168	180	136	475	....	....	4,952	....	770
Ratio (percentage)	....	1.55	.085	.755	2.19	1.88	2.20	.339	.257	.897	....	....	9.35	....	1.45

Total weight of food ....grams.. 11,111
Total ratio of food weight to body weight........................per cent.. 20.98
Daily average ratio of food weight to body weight........................do.... 5.25

No. 6—L. M. S.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 27	60.08	205	....	160	225	150	300	45	69	400	150	300	69	....	175
28	60.45	205	80	80	200	....	331	67	60	400	150	450	62	....	204
29	60.23	201	....	160	300	150	336	60	82	....	150	450	70	....	200
30	60.32	209	....	160	250	150	330	45	60	....	150	300	72	....	194
Average	60.27	205	80	140	241	150	325	54	68	400	150	375	68	....	193
Total	....	820	80	560	975	450	1,300	217	271	800	600	1,500	273	....	773
Ratio (percentage)	....	1.36	.132	.921	1.62	.746	2.15	.360	.449	1.32	.995	2.49	.453	....	1.28

Total weight of food ....grams.. 8,619
Total ratio of food weight to body weight ....per cent.. 14.30
Daily average ratio of food weight to body weight ....do.... 3.58

TABLE XVI.—*Ratio of food weight to body weight in the third preservative subperiod of Series I.*

No. 1—J. N.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902–3.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 31	71.35	206	....	120	300	250	300	45	37.5	....	....	....	1,238	....	200
Jan. 1	71.17	210	....	125	195	250	300	45	48.5	....	....	....	1,238	40	200
2	71.40	212	117	....	300	250	300	45	44.0	....	....	....	1,238	....	180
3	71.20	201	....	120	300	230	300	45	44.0	....	....	....	1,238	....	200
Average	71.28	207	117	122	274	245	300	45	43.5	....	....	....	1,238	40	195
Total	....	829	117	365	1,095	980	1,200	180	174.0	....	....	....	4,952	40	780
Ratio (percentage)	....	1.16	.164	.512	1.53	1.37	1.68	.252	.244	....	....	....	6.94	.056	1.09

Total weight of food ....grams.. 10,712
Total ratio of food weight to body weight ....per cent.. 15.03
Daily average ratio of food weight to body weight ....do.... 3.76

TABLE XVI.—*Ratio of food weight to body weight in the third preservative subperiod of Series I*—Continued.

No. 2—F. C. W.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902-3.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 31	70.94	210	....	160	350	150	248	45	44	650	....	....	825	....	200
Jan. 1	70.35	210	....	170	370	150	217	45	33	600	....	....	825	40	200
2	70.90	212	160	....	350	150	288	45	66	700	....	....	1,032	....	180
3	70.93	201	....	160	350	130	219	45	33	600	....	....	619	....	200
Average	70.78	208	160	163	380	145	243	45	44	638	....	....	825	40	195
Total	....	833	160	490	1,420	580	972	180	176	2,550	....	....	3,301	40	780
Ratio (percentage)	....	1.17	.226	.692	2.00	.819	1.37	.254	.249	3.60	....	....	4.66	.056	1.10

Total weight of food ....grams.. 11,482
Total ratio of food weight to body weight ....per cent.. 16.22
Daily average ratio of food weight to body weight....................do.... 4.06

No. 3—W. S. O.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902-3.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 31	54.85	193	....	160	325	150	302	30	66	200	160	160	619	....	200
Jan. 1	54.05	210	....	170	270	120	213	45	55	....	150	150	223	40	200
2	54.00	212	160	....	275	150	87	30	77	600	150	160	119	....	180
3	53.58	201	....	160	275	150	173	38	55	600	160	150	417	....	200
Average	54.07	204	160	163	286	143	194	36	63	467	155	155	345	40	195
Total	....	816	160	490	1,145	570	775	143	253	1,400	620	620	1,378	40	780
Ratio (percentage)	....	1.51	.296	.906	2.12	1.05	1.43	.264	.468	2.59	1.14	1.14	2.55	.074	1.44

Total weight of food ....grams.. 9,190
Total ratio of food weight to body weight ....per cent.. 17.00
Daily average ratio of food weight to body weight ....do.... 4.25

No. 4—W. L. D.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902–3.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 31	57.30	175		160	250	150	175	53	18	700			1,238		200
Jan. 1	55.70			90	100	150	100	15					826		100
2	56.08	212	137		170		235	60	13	450			1,238		80
3	56.10			80	250	150	157	44.5		300			1,032		200
Average	56.30	194	137	110	193	150	167	43.1	13	483			1,081		145
Total		387	137	330	770	450	667	172.5	26	1,450			4,334		580
Ratio (percentage)		.687	.243	.586	1.37	.799	1.18	.306	.461	2.57			7.69		1.03

Total weight of food .... grams.. 9,303.5
Total ratio of food weight to body weight .... per cent.. 16.52
Daily average ratio of food weight to body weight .... do.... 4.13

No. 5—R. V. F.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902–3.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 31	53.30	200		80	250		300	45					1,238		200
Jan. 1	53.75	210		125	270	250	222	45	22	200			1,238	40	100
2	53.70	212	80		250	250	242	45	33	75			1,238		80
3	53.70	201		80	250	230	250	45	22				1,238		200
Average	53.61	206	80	71	255	183	254	45	26	138			1,238	40	145
Total		823	80	285	1,020	730	1,014	180	77	275			4,952	40	580
Ratio (percentage)		1.53	.149	.531	1.88	1.36	1.89	.335	.143	.513			9.23	.075	1.08

Total weight of food .... grams.. 10,056
Total ratio of food weight to body weight .... per cent.. 18.76
Daily average ratio of food weight to body weight .... do.... 4.69

TABLE XVI.—*Ratio of food weight to body weight in the third preservative subperiod of Series I*—Continued.

No. 6—L. M. S.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Condiments.	Dessert.
1902–3.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Dec. 31	60.50	198	....	160	300	150	300	52	55	450	150	300	77	....	100
Jan. 1	60.20	210	....	170	250	150	325	45	55	250	150	300	74	40	200
2	59.90	212	160	....	300	150	298	45	66	250	150	450	83	....	180
3	60.15	201	....	160	250	130	253	45	55	400	150	300	80	....	200
Average	60.19	205	160	163	275	145	294	47	58	363	150	338	79	40	170
Total	....	821	160	490	1,100	580	1,176	187	231	1,350	600	1,350	314	40	680
Ratio (percentage)	....	1.36	.266	.814	1.82	.963	1.95	.316	.383	2.24	.996	2.24	.522	.066	1.13

Total weight of food .... grams.. 9,079
Total ratio of food weight to body weight .... per cent.. 15.08
Daily average ratio of food weight to body weight .... do.... 3.77

TABLE XVII.—*Ratio of food weight to body weight in the after period of Series I.*

No. 1—J. N.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1903.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Jan. 5	71.44	209	....	120	300	250	300	45	26.5	....	....	....	1,238	200
6	71.55	203	....	120	175	250	300	45	26.5	....	....	....	1,238	200
7	71.75	209	....	120	300	250	300	45	22.0	....	....	....	1,238	180
8	71.70	200	....	120	300	250	300	45	37.5	....	....	....	1,115	200
9	71.90	214	120	....	300	250	300	45	22.0	....	....	....	1,238	170
10	71.80	200	....	120	350	40	272	45	....	....	....	....	1,238	200
11	71.65	209	38	80	350	40	300	45	....	....	....	....	1,238	200
12	71.61	204	....	120	300	40	300	45	....	150	....	....	1,233	180
13	71.40	215	....	120	300	40	288	45	....	200	....	....	1,238	200
Average	71.64	207	79	115	297	157	296	45	26.9	175	....	....	1,224	192
Total	....	1,863	158	920	2,675	1,410	2,660	405	134.5	350	....	....	11,019	1,730
Ratio (percentage)	....	2.60	.221	1.28	3.73	1.97	3.71	.565	.188	.489	....	....	15.38	2.41

Total weight of food .... grams.. 23,324.5
Total ratio of food weight to body weight .... per cent.. 32.56
Daily average ratio of food weight to body weight .... do.... 3.62

No. 2—F. C. W.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1903.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Jan. 5	70.55	209	....	160	350	150	201	45	22.0	850	....	....	743	200
6	70.69	203	....	160	200	150	229	45	33.0	650	....	....	722	200
7	70.83	209	....	140	350	150	231	45	99.0	700	....	....	826	180
8	70.80	200	....	160	350	150	274	45	33.0	800	....	....	619	200
9	70.78	214	160	....	350	150	271	45	66.0	600	....	....	826	170
10	71.04	200	....	160	400	30	257	45	88.0	500	....	....	1,032	200
11	70.85	209	88	80	400	30	258	45	59.5	400	....	....	1,032	200
12	71.10	201	....	160	350	30	300	45	110.0	400	....	....	1,032	180
13	71.20	215	....	160	350	30	278	45	99.0	800	....	....	1,032	200
Average	70.87	207	124	148	344	97	256	45	67.7	633	....	....	874	192
Total	....	1,863	248	1,180	3,100	870	2,302	405	609.5	5,700	....	....	7,864	1,730
Ratio (percentage)	....	2.63	.350	1.67	4.37	1.23	3.25	.571	.860	8.04	....	....	11.10	2.44

Total weight of food .... grams.. 25,971.5
Total ratio of food weight to body weight .... per cent.. 36.65
Daily average ratio of food weight to body weight .... do.... 4.07

No. 3—W. S. O.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1903.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Jan. 5	54.10	209	....	160	175	150	300	45	33	400	....	310	619	200
6	54.54	203	....	160	275	150	253	45	77	400	160	310	619	200
7	54.69	209	....	140	275	150	319	45	77	....	150	310	619	180
8	54.56	200	....	160	275	150	333	45	77	200	150	310	619	200
9	54.80	214	156	....	275	150	300	45	77	200	150	295	619	70
10	54.80	200	....	160	325	30	351	45	77	200	134	160	516	200
11	55.05	209	86	80	325	40	353	45	88	200	160	150	413	100
12	54.95	204	....	160	275	30	320	45	88	200	160	300	929	180
13	55.10	215	....	160	275	30	354	45	88	100	155	310	619	200
Average	54.73	207	121	148	275	98	320	45	76	238	152	273	619	170
Total	....	1,863	242	1,180	2,475	880	2,883	405	682	1,900	1,219	2,455	5,572	1,530
Ratio (percentage)	....	3.40	.442	2.16	4.52	1.61	5.27	.740	1.25	3.47	2.23	4.49	10.18	2.80

Total weight of food .... grams.. 23,286
Total ratio of food weight to body weight .... per cent.. 42.55
Daily average ratio of food weight to body weight .... do.... 4.73

TABLE XVII.—*Ratio of food weight to body weight in the after period of Series I*—Continued.

No. 4—W. L. D.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1903.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Jan. 5	56.10	209	....	80	182	150	140	45	26	600	....	....	1,032	100
6	56.08	203	....	45	150	150	143	37	13	600	....	....	1,053	200
7	56.35	209	....	40	174	150	195	60	13	400	....	....	1,238	180
8	56.25	200	....	50	225	150	211	75	....	300	....	....	1,032	200
9	55.75	....	80	....	250	150	240	83	13	400	....	....	722	170
10	56.05	....	....	80	300	30	240	75	13	500	....	....	826	200
11	55.95	....	40	40	300	30	240	90	13	200	....	....	1,238	200
12	56.60	204	....	80	250	30	240	90	13	500	....	....	1,238	180
13	56.50	215	....	80	250	30	240	90	13	450	....	....	1,238	200
Average	56.18	207	60	62	231	97	210	72	15	439	....	....	1,069	181
Total	....	1,240	120	495	2,081	870	1,889	645	117	3,950	....	....	9,617	1,630
Ratio (percentage)	....	2.21	.214	.881	3.70	1.55	3.36	1.15	.208	7.03	....	....	17.12	2.90

Total weight of food ....grams.. 22,654
Total ratio of food weight to body weight ....per cent.. 40.32
Daily average ratio of food weight to body weight ....do.... 4.48

No. 5—R. V. F.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1903.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Jan. 5	53.97	209	....	80	150	250	241	37.5	41	....	....	....	1,238	200
6	54.18	203	....	80	250	250	258	45.0	22	....	....	....	1,238	300
7	53.83	209	....	80	150	250	300	45.0	33	....	....	....	1,238	180
8	53.60	200	....	80	250	....	285	45.0	22	....	....	....	1,238	200
9	53.59	214	80	....	300	....	300	45.0	22	....	....	....	1,238	170
10	53.90	200	....	80	250	40	300	45.0	11	200	....	....	1,238	200
11	53.69	209	43	80	300	40	286	45.0	26	....	....	....	1,238	200
12	53.91	204	....	80	250	40	238	37.5	22	100	....	....	1,238	180
13	54.15	215	....	80	250	40	222	45.0	11	....	....	....	1,238	200
Average	53.87	207	61	80	239	130	270	43.3	24	150	....	....	1,238	203
Total	....	1,863	123	640	2,150	910	2,430	390.0	213	300	....	....	11,142	1,830
Ratio (percentage)	....	3.46	.228	1.19	3.99	1.69	4.51	.724	.395	.557	....	....	20.68	3.40

Total weight of food ....grams.. 21,991
Total ratio of food weight to body weight ....per cent.. 40.82
Daily average ratio of food weight to body weight ....do.... 4.54

No. 6—L. M. S.

Date.	Weight, stripped.	Soup.	Fish.	Meat.	Vegetables.	Cereals.	Bread.	Butter.	Sugar.	Water.	Tea.	Coffee.	Milk.	Dessert.
1903.	*Kilos.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
Jan. 5	60.30	209	....	160	250	150	312	45.0	55	450	150	300	103	100
6	60.15	203	....	120	250	....	288	52.5	55	425	150	300	72	200
7	59.75	209	....	140	300	150	310	45.0	66	350	150	300	129	180
8	60.02	200	....	160	250	150	291	45.0	66	350	150	450	103	200
9	60.15	214	156	....	300	150	336	67.0	66	450	150	450	256	170
10	60.60	200	....	160	350	30	319	60.0	66	250	150	300	201	200
11	60.25	209	82	80	300	30	300	41.0	44	200	150	450	114	200
12	59.85	204	....	160	300	30	275	52.5	66	400	150	450	83	180
13	59.85	215	....	160	250	40	330	67.5	55	450	150	450	898	200
Average	60.10	207	119	142	283	91	307	52.8	60	369	150	383	218	181
Total	....	1,863	238	1,140	2,550	730	2,764	475.5	539	3,325	1,350	3,450	1,959	1,630
Ratio (percentage)	....	3.10	.396	1.90	4.24	1.21	4.60	.791	.897	5.53	2.25	5.74	3.26	2.71

Total weight of food ....grams.. 22,013.5
Total ratio of food weight to body weight ....per cent.. 36.63
Daily average ratio of food weight to body weight ....do.... 4.07

Passing to the consideration of the effect of the preservative upon the ratio of food weight to body weight, Tables XIII–XVII disclose the following facts:

The highest ratio in the fore period was found in the case of No. 3, namely, 5.33, and the lowest in the case of No. 6, namely, 3.41. Inasmuch as No. 6, however, was absent from one meal, this number is not to be considered as normal. By combining the total quantity of food consumed by all six members and dividing by the number of persons, it is found that 36,311 grams is the average per man for the fourteen-day period. Dividing again by 61.76 kilograms, the average weight of the subjects for the period, the ratio of 58.80 appears for the fourteen days. This gives 4.20 as the mean daily ratio of food to body weight per man for the fore period.

For the preservative subperiod during which 1 gram of boric acid was given the highest ratio is found for No. 4, namely, 5.05, and the lowest for No. 6, namely, 3.30. The mean ratio for the period is 4.19, and the mean weight of the body is 61.36.

For the subperiod during which 2 grams of boric acid were given the highest ratio is found for No. 5, namely, 5.25, and the lowest for No. 6, namely, 3.58. The mean ratio for this period is 4.41, and the mean body weight is 61.19.

For the subperiod during which 3 grams of boric acid were administered the highest ratio is found in the case of No. 5, namely, 4.69, and the lowest in the case of No. 1, namely, 3.76. The mean ratio is 4.08, and the mean body weight is 61.04.

For the after period, extending over nine days, the highest ratio is found in the case of No. 3, namely, 4.73, and the lowest in the case of No. 1, namely, 3.62. The mean ratio for the period is 4.21, and the mean weight of the body is 61.23.

A comparative view of these mean ratios for the periods mentioned is shown in the following tabular statement:

TABLE XVIII.—*Average daily ratio of weight of food to weight of body in Series I, by periods.*

Period.	Average daily ratio of food consumed.	Average daily weight of body.
	Per cent.	*Kilos.*
Fore period	4.20	61.76
Preservative period	4.22	61.20
After period	4.21	61.23

It will be noted from the above that the total weight of food consumed in proportion to the weight of the body changes very little from one period to another. There was, as is noticed, a tendency to

decrease in the body weight during the preservative period, the average weight having fallen from 61.76 kilograms to 61.20. During the after period there was a tendency again for the body weight to rise, it having reached an average of 61.23 at the end of the after period.

Too much importance must not be attached to the above data, by reason of the fact that the total water consumed, both that existing in the food and that taken separately, has been considered as food itself. It is true that water is, in one sense, the most important food for the sustenance of the human body, without which all the physiological functions of the body would cease. It is, however, also true that water is one of the important products of metabolic activity, being, in conjunction with carbon dioxid, the principal product of that combustion which produces and sustains the animal heat. From this point of view the water may be regarded as a waste product of food as well as a food itself.

A more valuable comparison of the average weight of food consumed to the average weight of the body may be secured by reducing the food to a dry basis. In Table XIX is given a comparative statement showing the relation of the weight of dry food to body weight, as compared with the moist food, during the first series of experiments. These data are interesting, but it does not seem advisable to increase the bulk of the bulletin by computing them for each series. It is a matter of considerable interest, however, to note that the average weight of dry food consumed is almost exactly 1 per cent of the weight of the body. In the fore period it is seen that the smallest percentage of food consumed in relation to the weight of the body is by No. 6, namely, 0.79, and the largest by No. 3, namely, 1.21, while the average percentage for the whole fore period of the six men under observation is 0.96. Taken as a whole, the average quantity of food consumed in relation to body weight during the preservative period is 0.99 per cent of the average body weight. The smallest quantity consumed in any instance is by No. 1, in the third subperiod, namely, 0.83 per cent, and the largest quantity is by No. 5, in the second subperiod, namely, 1.25 per cent. In the after period the mean quantity of dry food consumed in relation to body weight is 1.01 per cent. The smallest quantity is consumed by Nos. 1 and 2, namely, 0.92 per cent, and the largest quantity by No. 3, namely, 1.20 per cent.

It is seen that but little change is shown in the total weight of dry food consumed in relation to body weight in the three periods. The data show the interesting fact in nutrition that healthy young men in one hundred days will eat an amount of dry food almost exactly equal to the weight of their bodies. It is also interesting to note that the daily ratio of moist food consumed, including the water drunk, is a little more than four times as great as that of the dry food.

Table XIX.—*Comparison of average daily ratios of food weight (moist and dry) to body weight for Series I.*

Subject.	Body weight.	Average daily weight of dry food.	Average daily ratio of food weight to body weight.	
			Dry.	Moist.
Fore period.	*Kilos.*	*Grams.*	*Per cent.*	*Per cent.*
No. 1	71.62	619.2	0.87	4.17
2	71.89	602.3	.84	3.98
3	55.22	670.0	1.21	5.33
4	57.57	568.9	.99	5.29
5	52.63	591.6	1.12	4.73
6	61.60	488.8	.79	3.41
Average	61.76	590.0	.96	4.20
Preservative period.				
First subperiod:				
No. 1	71.59	664.5	.93	3.62
2	71.23	628.6	.88	4.10
3	55.03	629.2	1.14	3.51
4	57.08	553.2	.97	5.05
5	52.49	615.2	1.17	4.82
6	60.75	530.7	.87	3.30
Average	61.36	604.0	.98	4.19
Second subperiod:				
No. 1	71.26	701.5	.98	3.86
2	70.98	645.0	.91	4.14
3	54.72	638.4	1.17	4.73
4	56.93	576.8	1.01	5.21
5	52.96	663.0	1.25	5.25
6	60.27	598.5	.99	3.58
Average	61.19	637.0	1.04	4.41
Third subperiod:				
No. 1	71.28	593.2	.83	3.76
2	70.78	627.5	.89	4.06
3	54.07	523.8	.97	4.25
4	56.30	482.9	.86	4.13
5	53.61	617.0	1.15	4.69
6	60.19	566.8	.94	3.77
Average	61.04	569.0	.93	4.08
Entire preservative period:				
Average	61.20	603.1	.99	4.22
After period.				
No. 1	71.64	660.8	.92	3.62
2	70.87	651.0	.92	4.07
3	54.73	654.6	1.20	4.73
4	56.18	525.8	.94	4.48
5	53.87	614.1	1.14	4.54
6	60.10	589.4	.98	4.07
Average	61.23	616.0	1.01	4.21

THE NUMBER OF CORPUSCLES AND THE QUANTITY OF HEMOGLOBIN IN THE BLOOD.

The determination of the corpuscles and hemoglobin in the blood was made by the methods usually employed. For determining the number of corpuscles in the blood the method employed was the ordinary one in which the Thoma-Zeiss apparatus is used. The details of this method are such as are given by Cabot.[a] The apparatus used for making the hemoglobin test in the first series was the Dare apparatus.

[a] Clinical Examination of the Blood, by R. C. Cabot, fourth revised edition, pp. 12–19. Wm. Wood & Co., New York, 1901.

In all subsequent examinations, however, the Fleischl apparatus was used. These methods are also given in the publication above mentioned.[a]

The number of corpuscles was counted independently by two observers, Messrs. C. P. Knight and B. J. Howard, and the mean of the two counts was taken as the correct number of corpuscles in each cubic millimeter. The hemoglobin was measured in the same way. The independent data obtained by the two observers agreed well. The first observations were made for the purpose of trying the methods and obtaining the necessary skill on the part of the observers.

Instruction in making these observations was given by Dr. William B. French and Dr. John H. McCormick, who kindly supervised the first tests and directed the detail of the observations. The number of corpuscles per cubic millimeter and the reading for hemoglobin for each of the members of Series I, III, and V are given in Table XXI, shown on page 128. The first examinations were made a few days after completing the after period of the first series. The second observation was made upon the same subjects on the 28th of February, at the beginning of the preservative period of Series III.

The data for Series III show a fair agreement between the two observers, the only notable difference in regard to the number of corpuscles being in the case of No. 6, the counts differing by over 1,000,000. In the measurement of the hemoglobin the two sets of data agree satisfactorily. It will be noticed in this case that No. 4 of the first observation differs remarkably from No. 4 in the second. This is because of a change in the individual, No. 4 of the first series having dropped out of the observation and his place being taken by another. Both the red corpuscles and the hemoglobin are extremely low in the case of the new subject.

It is noticed that the amount of hemoglobin does not always coincide with the number of corpuscles; for instance, No. 2, with over 6,500,000 corpuscles, shows a hemoglobin reading of only 71.6 per cent of the amount normally present in human blood, while No. 3, with 5,500,000 corpuscles, shows 107.6 per cent.

The next series of observations is the only complete one which was secured, covering all three periods of Series V. The first observation was made about the middle of the fore period, namely, April 28. The second observation was made near the beginning of the last half of the preservative period, namely, on the 29th of May. The last observation was made at the end of the after period, namely, on June 30. (See Table XXI.)

A comparison of these data by individuals shows, in the case of No. 1, a progressive increase in the number of corpuscles, which rises from

[a] Clinical Examination of the Blood, by R. C. Cabot, fourth revised edition, pp. 33, 34, 37–39.

4,380,000 in the fore period, to 5,330,000 in the preservative period, and to 5,695,000 in the after period. The hemoglobin reading at the same time falls from 102.6 to 99.2 in the preservative period, and rises again to 108.1 in the after period.

In the case of No. 2 there is a decided decrease in the blood corpuscles during the preservative period, falling from 6,352,000 to 5,352,000, and rising again to 6,248,000 at the end of the after period. The hemoglobin also shows the same remarkable variations, falling from 96.8 in the fore period to 71 in the preservative period, and rising to 89.8 in the after period. In this instance it appears that under the administration of the preservative both the number of corpuscles and the hemoglobin were diminished.

In the case of No. 3, we have again the same series of phenomena as were exhibited in No. 1, as to the number of corpuscles, which rose from 5,450,000 in the fore period to 6,040,000 in the preservative period, and again to 6,724,000 in the after period. There is also a progressive increase in the amount of hemoglobin, which rises from 98 per cent in the fore period to 102 in the preservative period, and to 105.9 in the after period. Both No. 1 and No. 3 show a continuous improvement in the character of the blood from the beginning of the fore period to the end of the after period, and the administration of the preservative does not appear to have affected one way or the other this progressive improvement.

In the case of No. 4 the data are not complete, the subject having withdrawn from the class and left the city at the end of the preservative period. The number of corpuscles in the blood in his case slightly decreases during the administration of the borax, but the percentage of hemoglobin rises. This percentage, however, is so low, namely, 57.2, for the fore period that it should be accepted with some degree of doubt, although the two observers agreed closely in their estimate of it, the one having estimated the hemoglobin at 56.4 and the other at 58.1.

In the case of No. 5 it should be noted that there is also a change in the personnel, No. 5 of the first series having been by reason of illness withdrawn from observation and placed on a special table, his place having been taken by a much larger man. This subject, however, was markedly anemic as respects the number of red corpuscles in the fore and after periods. The administration of the preservative appeared to increase very markedly the number of red corpuscles, which rise from 4,886,000 in the fore period to 6,344,000 in the preservative period, falling again to 5,764,000 in the after period. The percentage of hemoglobin, however, is not changed from the fore period to the preservative period, remaining 97.5 in each case. There is, however, a very decided increase in hemoglobin during the after

period, the percentage rising to 106.4. These data are directly opposed to those obtained in the case of No. 2 for the same series of observations.

In the case of No. 6 we have the same series of phenomena exhibited as respects the number of blood corpuscles as are shown in the case of Nos. 1 and 3, namely, a gradual rise in the number of red corpuscles during the series. Beginning with 5,000,000 in the fore period the number rises to 5,668,000 in the preservative period, and to 5,780,000 in the after period. The hemoglobin, which is 91.6 per cent in the fore period, falls to 82.4 per cent in the preservative period and rises again to 102 per cent in the after period.

Collecting all the data of Series V into one expression, we find that the average number of corpuscles in the blood of all the subjects during the fore period is 5,128,166, during the preservative period 5,571,000, and during the after period 6,042,200. These data seem to indicate a tendency on the part of the preservative to increase the number of corpuscles in the blood. The hemoglobin numbers show an average of 90.6 during the fore period, 87.6 during the preservative period, and 102.4 during the after period. From these figures it would appear that there is a tendency on the part of the preservative to diminish the percentage of hemoglobin.

Nos. 1, 3, and 5 are the only members of Series V who finished the entire series. Considering these members only, the averages are as given in Table XX.

TABLE XX.—*Averages of corpuscle and hemoglobin determinations for Series V, considering only Nos. 1, 3, and 5.*

Date.	Corpuscles per cubic millimeter.	Hemoglobin.
1903.	*Number.*	*Per cent.*
April 28	4,905,333	99.1
May 29	5,904,666	99.5
June 30	6,061,000	106.8

The data concerning the blood must not be too literally construed, because of their contradictory nature in regard to individuals. The final deduction can only be drawn that if this preservative affects the number of corpuscles and the quantity of hemoglobin at all it does so in a very irregular manner, differing in different individuals, and in a way which can not be used as a basis of any definite conclusion.

TABLE XXI.—*Corpuscles and hemoglobin in the blood of subjects Nos. 1–6, as determined at various dates.*

[Hemoglobin expressed in percentage of amount normally present in human blood.]

Subject.	Series I, January 19, 1903.[a]		Series III, February 28, 1903.		Series V.					
					April 28, 1903.		May 29, 1903.		June 30, 1903.	
	Corpuscles per cubic millimeter.	Hemoglobin.	Corpuscles per cubic millimeter.	Hemoglobin.	Corpuscles per cubic millimeter.	Hemoglobin.	Corpuscles per cubic millimeter.	Hemoglobin.	Corpuscles per cubic millimeter.	Hemoglobin.
No. 1:	*Number.*	*P. ct.*	*Number.*	*P. ct.*	*Number.*	*P. ct.*	*Number.*	*P. ct.*	*Number.*	*P. ct.*
Estimate A.....	5,904,000	97.0	5,280,000	105.0	4,384,000	104.0	5,360,000	100.1	5,720,000	108.2
Estimate B.....	....	94.5	5,272,000	104.0	4,376,000	101.2	5,300,000	98.2	5,670,000	108.1
Mean	5,904,000	95.8	5,276,000	104.5	4,380,000	102.6	5,330,000	99.2	5,695,000	108.1
No. 2:										
Estimate A.....	5,832,000	96.6	6,528,000	70.2	6,400,000	97.2	5,312,000	70.3	6,296,000	91.3
Estimate B.....	....	95.0	6,600,000	73.0	6,304,000	96.4	5,392,000	71.7	6,200,000	88.3
Mean	5,832,000	95.8	6,564,000	71.6	6,352,000	96.8	5,352,000	71.0	6,248,000	89.8
No. 3:										
Estimate A.....	6,464,000	96.7	5,584,000	108.6	5,376,000	99.0	6,080,000	100.5	6,760,000	106.2
Estimate B.....	....	......	5,568,000	106.5	5,524,000	97.0	6,000,000	103.5	6,688,000	105.6
Mean	6,464,000	96.7	5,576,000	107.6	5,450,000	98.0	6,040,000	102.0	6,724,000	105.9
No. 4:										
Estimate A.....	5,624,000	96.0	[b] 4,640,000	64.3	4,786,000	56.4	4,720,000	74.7	....	......
Estimate B.....	....	......	4,648,000	64.0	4,616,000	58.1	4,664,000	72.1	....	......
Mean	5,624,000	96.0	4,644,000	64.2	4,701,000	57.2	4,692,000	73.4	....	......
No. 5:										
Estimate A.....	6,600,000	......	[b] 5,568,000	98.0	5,708,000	97.0	6,352,000	97.9	5,784,000	107.1
Estimate B.....	6,404,000	......	5,544,000	101.0	4,064,000	98.0	6,336,000	97.2	5,744,000	105.7
Mean	6,502,000	......	5,556,000	99.5	4,886,000	97.5	6,344,000	97.5	5,764,000	106.4
No. 6:										
Estimate A.....	5,200,000	100.0	5,328,000	86.0	5,040,000	90.2	5,656,000	82.0	5,800,000	103.9
Estimate B.....	5,008,000	100.0	6,456,000	88.4	4,960,000	93.0	5,680,000	82.8	5,760,000	100.1
Mean	5,104,000	100.0	5,892,000	87.2	5,000,000	91.6	5,668,000	82.4	5,780,000	102.0
Average mean estimate ...	5,905,000	96.9	5,584,666	89.1	5,128,166	90.6	5,571,000	87.6	6,042,200	102.4

[a] Dates given are for No. 1. There are a few variations for other members, as follows: In Series I, No. 2, January 17; No. 3, January 13; No. 4, January 16; Nos. 5 and 6, January 12. In Series V, preservative period, Nos. 2, 4, and 6, May 28.

[b] Change of personnel.

COMPOSITION OF THE FECES.

The data for the discussion of the composition of the feces are taken from several sets of tables. Table XXII, given herewith (p. 151), is a summary showing by periods, for each individual, the average daily weight of the wet feces, the percentage of water therein, and the weight of the dry feces. Tables XLV–LV, prepared to show the nitrogen balance in the body, give the total weight of nitrogen in the food, the weight of nitrogen eliminated, and the percentage of nitrogen eliminated. In the tables these facts are given in full for each individual, and are also summarized by periods and series; but in the present discussion the percentages used are the averages for the various periods only. Similar facts for phosphoric acid are to be found in Tables LVI–LXVI; for fat in Tables LXVII–LXXV, and for calories in Tables LXXVI–LXXXIV (see appendix).

SERIES I.

In Series I the summary includes all the members of the table, since they all went through the entire series.

No. 1—J. N.

Compared by periods, the average daily weight of the wet feces is 142.1 grams for the fore period, 134.9 for the preservative period, and 148 for the after period. The percentage of water in the feces is almost constant throughout, being 80.86 for the fore period, 79.69 for the preservative period, and 78.11 for the after period. The average daily weight of dry feces is 27.2 grams for the fore period, 27.4 for the preservative period, and 32.4 for the after period. The percentage of nitrogen eliminated in the feces is 7.7 for the fore period, 7.1 for the preservative period, and 8.2 for the after period. The percentage of phosphoric acid eliminated in the feces is 47.1 for the fore period, 39.3 for the preservative period, and 49.4 for the after period.

The above data show that the preservative has no notable influence upon the percentage of water in the feces, and but little on the total weight of the dry feces, although there is a considerable increase in this respect in the after period. They show, also, a slight tendency on the part of the preservative to decrease the percentage of nitrogen eliminated in the feces, and a marked tendency to decrease the percentage of phosphoric acid eliminated in the feces. In other words, there is a slight tendency on the part of the preservative to increase the absorption of the nitrogenous and phosphatic elements of the food in passing through the digestive tract.

No. 2—F. C. W.

The data relating to subject No. 2 are given in a similar manner, and it is not necessary to discuss them in detail, but only as to general results. In the case of No. 2 there appears to be a tendency on the part of the preservative to increase the amount of water in the feces. In other words, the feces, according to their chemical composition, are softer than in the fore and after periods, the average percentage of water in the fore period in the feces of No. 2 being 79.65, and in the after period 77.88, while the average amount for the preservative period is 83.91. There is a slight increase also in the total weight of dry feces during the preservative period. The average daily weight of the dry feces in the fore period is 23.2, for the preservative period 30.7, and for the after period 29. The percentage of nitrogen eliminated in the feces for the fore period is 7.7, for the preservative period 9.9, and for the after period 8.8. The percentage of phosphoric acid eliminated during the fore period is 37.1, for the preservative period 35.1, and for the after period 36.6.

These data, in respect of the elimination of nitrogen, tend to show a diminished absorption of the nitrogenous foods during the passage of the food through the alimentary canal, which is opposite to the conclusion derived from a study of the data of the first subject, and a slightly increased absorption of the phosphatic elements of the food, which is in harmony with the data obtained on subject No. 1.

No. 3—W. S. O.

These data also will be considered only en bloc. Again there is seen in the case of No. 3 a tendency on the part of the preservative to increase slightly the percentage of water in the feces, that of the fore period being 79, of the preservative period 80.72, and of the after period 77.39. In respect of nitrogen eliminated, we see an agreement with No. 2, the data showing a less complete absorption of the nitrogenous elements of the food during its passage through the alimentary canal, the percentage of nitrogen excreted in the feces during the fore period being 7.6, for the preservative period 9.3, and for the after period 7.6. The percentage of phosphoric acid excreted in the fore period is 25.4, in the preservative period 30.1, and in the after period 24.7.

These data show a very much larger absorption of the phosphatic elements of the food in passing through the alimentary canal than in the cases of Nos. 1 and 2. The preservative in this case, however, does tend to decrease the amount of the phosphatic elements absorbed.

No. 4—W. L. D.

We find in the case of No. 4 again a slight tendency on the part of the preservative to increase the amount of water in the feces, the percentage for the fore period being 78, for the preservative period 81.89, and for the after period 81.04. The percentage of nitrogen eliminated in the feces in the case of No. 4 is 8.4 for the fore period, 7.9 for the preservative period, and 10.6 for the after period. Here there seems to be a tendency on the part of the preservative to increase the absorption of the nitrogenous elements of the food from the alimentary canal. The percentage of phosphoric acid eliminated in the fore period is 30.7, for the preservative period 27.2, and for the after period 34.5. In this instance the preservative has an apparent tendency to increase the absorption of the phosphatic elements of the foods during their passage through the alimentary canal.

No. 5—R. V. F.

Again in this case we see a slight tendency manifest on the part of the preservative to increase the percentage of water in the feces, the quantity in the fore period being 77.55, in the preservative period 80.04, and in the after period 79.56. The percentage of nitrogen elim-

inated in the feces in the fore period is 10, in the preservative period 11, and in the after period 10.6. There is an apparent tendency of the preservative in this case to diminish the percentage of the nitrogenous elements of the food absorbed from the alimentary canal. The percentage of phosphoric acid eliminated in the feces during the fore period is 35.7, during the preservative period 37.2, and during the after period 30.9. In this case there is an apparent tendency of the preservative to diminish the amount of the phosphatic elements of the food absorbed from the alimentary canal.

No. 6—L. M. S.

In this instance there seems to be no tendency on the part of the preservative to increase the amount of water in the feces, the percentage for the fore period being 82.97, for the preservative period 81.66, and for the after period 79.86. The percentage of nitrogen eliminated in the feces in the fore period is 12.9, in the preservative period 13.9, and in the after period 11.6. In this subject there is an apparent tendency on the part of the preservative to diminish the absorption of the nitrogenous elements of the food from the alimentary canal. The percentage of phosphoric acid eliminated in the feces in the fore period is 27.2, in the preservative period 35.4, and in the after period 32.7. There is in this case a manifest tendency on the part of the preservative to diminish the absorption of the phosphatic elements of the foods during their passage through the alimentary canal.

SUMMARY.

In general there is a marked difference manifest in the six subjects in regard to the degree of absorption. The balances of Series I may be summarized in round numbers as follows: In the case of No. 1 almost half of the phosphoric acid entering the food is eliminated in the feces, and from 6 to 8 per cent of the total nitrogen exhibited in the food is recovered in the feces. In the case of No. 2 about 35 per cent of the phosphoric acid is recovered in the feces, and about 9 per cent of the nitrogen. In No. 3 about 28 per cent of the total phosphoric acid in the food is recovered in the feces, and about 8 per cent of the nitrogen. In the case of No. 4 about 30 per cent of the phosphoric acid exhibited in the food is recovered in the feces, and about 8 per cent of the nitrogen. In the case of No. 5 about 36 per cent of the phosphoric acid exhibited in the food is recovered in the feces and about 11 per cent of the nitrogen. In No. 6 about 33 per cent of the phosphoric acid exhibited in the food is recovered in the feces and 13 per cent of the nitrogen.

Combining all of the average data obtained from the six subjects into one expression, the following general data are obtained: The average daily weight of the moist feces per man in the fore period is 125.6

grams, during the preservative period 148.2, and during the after period 135.4. The average percentage of water in the feces of the fore period is 79.86, of the preservative period 81.44, and of the after period 79.10. The average weight of dry feces during the fore period is 25.3, during the preservative period 27.5, and during the after period 28.3. The average percentage of nitrogen eliminated in the feces during the fore period is 8.9, during the preservative period 9.6, and during the after period 9.5. The average percentage of phosphoric acid eliminated in the feces during the fore period is 35.1, during the preservative period 34.1, and during the after period 35.3.

The combined data show that the first effect of the preservative upon the composition of the feces is to increase slightly the percentage of water therein. There is also a tendency equally well manifested in this series to increase slightly the total weight of the dry matter occurring in the feces, and this tendency is continued during the after period, as might be expected. There is also a slight tendency to decrease the quantity of the nitrogenous elements of the food absorbed from the alimentary canal, and this tendency is also manifest during the after period. There is a slight tendency, on the other hand, to increase the amount of phosphoric acid absorbed from the alimentary canal.

A general review of the data shows that while there is a distinct effect produced by the preservative upon the composition of the feces it is not uniform among all the subjects. The effects are contradictory in some instances in the case of different subjects. The general tendency, however, to increase the quantity of water in the feces, to decrease the amount of nitrogenous elements absorbed from the alimentary canal, and to increase the amount of the phosphatic elements absorbed from the alimentary canal appears fairly well established for Series I.

Series II.

The data in this series are incomplete in many cases and imperfect in others, due to the illness (from other causes than that traceable to the administration of the preservative) of some members of the class during the progress of the observations. In so far as they were observed, the data are recorded in the balance sheets.

No. 7—E. R. M.

The percentage of nitrogen excreted in the feces in the fore period for No. 7 is 12.2, and for the preservative period 13.8. There are, however, marked variations in the preservative subperiods, the percentage of nitrogen excreted during the first subperiod rising to 18.4. Of the phosphoric acid 44.2 per cent is excreted in the feces during the fore period, and 44 per cent as a mean of the preservative period. Of

the fat consumed in the food 4.4 per cent is voided in the feces during the fore period and 6.5 per cent during the preservative period. Of the total calories in the food 4.6 per cent is voided in the feces during the fore period and 5.5 per cent during the preservative period. The percentage of water in the feces in the fore period is 74.65 and during the preservative period 78.75. No data have been collected on the feces for the after period by reason of the general illness and indisposition of all the members of the table.

These data, in the case of No. 7, show a tendency on the part of the preservative to decrease the amount of nitrogen absorbed from the alimentary canal and to increase very slightly the amount of phosphoric acid absorbed. There is also a marked tendency shown to interfere with the digestion and absorption of the fat and, in a like manner, with the general digestion and absorption of those elements which when oxidized furnish heat. In other words, in this case there was a marked tendency, in every one of the factors compared, on the part of the preservative to interfere slightly with the processes of digestion and absorption, with the exception of phosphoric acid.

In regard to the constitution of the feces as concerns their moisture content, there is a notable increase in the quantity of water during the preservative period, but this increase is in no case large enough to induce symptoms of diarrhea.

No. 8 (J. H. E.) and No. 9 (E. B. D.).

The data on Nos. 8 and 9, because of continued illness, are so incomplete that they are not regarded as profitable for further study. The next member of the class therefore to be considered is No. 10.

No. 10—W. J. J.

In this case the average percentage of nitrogen eliminated in the feces in the fore period is 9.1 and in the preservative period 9.2. In regard to the phosphoric acid, 41 per cent appears in the feces during the fore period and 36.4 in the preservative period. Of the fat ingested in the food, 4.7 per cent appears in the feces in the fore period and 5.4 in the preservative period. Of the calories consumed in the food, 4.1 per cent appears in the feces in the fore period and 4.3 in the preservative period. In regard to the percentage of moisture in the feces, it is found to be 75.74 per cent in the fore period and 74.75 in the preservative period.

These data indicate that the preservative is almost without influence in respect of the absorption of nitrogen from the food in passing through the alimentary canal. The quantity of phosphoric acid absorbed is increased, while the amount of fat absorbed from the alimentary canal is slightly diminished. More of the heat-producing elements of the food are excreted from the body during the preserv-

ative period than during the fore period. In regard to moisture, there is scarcely any change noted, but what little there is indicates a slightly drier consistence of the feces during the preservative period.

No. 11—J. S. C.

The data for No. 11 are likewise incomplete and are of little value for comparative purposes.

No. 12—B. J. T.

In the case of No. 12 the tables show that 8.3 per cent of the nitrogen exhibited in the food is eliminated in the feces during the fore period, while for the preservative period the per cent eliminated is 9.8. Of the phosphoric acid, 35.5 per cent of that exhibited in the food appears in the feces in the fore period, and 37.2 during the preservative period. Of the fat administered in the food, 3.4 per cent appears in the feces in the fore period, and 4.8 in the preservative period. Of the total calories consumed in the food, 3.8 per cent appears in the feces in the fore period and 4.2 in the preservative period. As respects the moisture in the feces, it is seen that it amounts to 76.95 per cent in the fore period and 76.18 in the preservative period. The data in this case also indicate a slight depressing effect of the preservative upon the absorption of the nitrogen in the alimentary canal. The effect upon the absorption of the phosphorus is also slight. As regards the digestion and assimilation of the fat, it appears to have been considerably interferred with by the administration of the preservative. The total number of calories in the feces, it is seen, is slightly increased in the preservative period over the quantity in the fore period. In regard to the moisture in the feces, it is remarkably constant during the whole of the observation, and no effect which can be justly noted is produced by the administration of the preservative. No. 12 was ill during the after part of the preservative period and the data must be considered in connection with the fact that although the quantity of food eaten was greatly diminished the débris of tissue broken down was quite abundant.

SUMMARY.

Summarizing the practically complete data of Nos. 7 and 10 we find the following results: The average total moist feces per day per man for the fore period is 127 grams and of dry feces 31.5. During the preservative period the average total moist feces is 152.9 grams and the dry matter 35.3. There seems to be here a slight tendency on the part of the preservative to increase the total weight of dry matter voided in the feces. In regard to water, the average content of the feces in the fore period is 75.20 per cent and in the preservative period 76.91.

The mean percentage of nitrogen eliminated in the fore period for

the two individuals is 10.5 and during the preservative period 11.5. In the case of phosphoric acid it is seen that 42.4 per cent is eliminated daily for the fore period and 40.1 per cent for the preservative period. The average percentage of fat found in the food voided in the feces during the fore period is 4.6 and in the preservative period 6. The average percentage of calories in the feces for the fore period is 4.4 and in the preservative period 4.9.

These data seem to show a slight inhibition on the part of the preservative to the absorption of the nitrogenous elements of the food during their passage through the alimentary canal. There appears to be on the whole a slight increase in the quantity of phosphoric acid absorbed during the preservative period over the fore period. The absorption of fat is slightly diminished by the operation of the preservative. There is also a slight decrease in the absorption of the heat-forming elements of the food during the administration of the preservative. As regards the water in the feces, it is somewhat greater in the preservative period than during the fore period.

Series III.

No. 1—J. N.

The percentage of nitrogen eliminated in the feces during the fore period is 8.2; during the preservative period, 7.2, and during the after period, 6.6. In this series there is a progressive diminution of the percentage of nitrogen eliminated in the feces. There is, moreover, a marked decrease in the quantity of feces during the preservative period, the weight of dry feces falling from 31.4 grams daily in the fore period to 28.5 grams daily in the preservative period and rising only to 29.1 grams daily in the after period. By reason of the interference with the digestion and consequent diminution of appetite, the quantity of nitrogen in the food diminishes during the preservative period, falling from 18.19 grams daily in the fore period to 17.69 grams daily in the preservative period, rising again, however, after the cessation of the administration of the boric acid to 19.5 grams in the after period. These important facts must not be lost sight of in judging of the effects of boric acid upon the absorption of the nitrogenous elements of the food. While it is evident that a larger percentage of nitrogen in the food is absorbed during the preservative periods, the total quantity of nitrogen in the food is less.

In the case of phosphoric acid, 50 per cent of the total amount in the food is eliminated in the feces during the fore period, 37.4 per cent during the preservative period, and 45.8 per cent during the after period.

In this case the administration of the boric acid appears to have increased to a marked degree the absorption of the phosphoric acid from the alimentary canal.

In the case of the fat, 7.2 per cent is excreted in the feces during the fore period, 4.7 per cent during the preservative period, and 3.7 per cent during the after period. In this case there seems to have been a very marked increase in the percentage of fat absorbed during the administration of the boric acid. This increased absorption of the fat also continues during the after period.

In regard to calories, it is seen in the case of No. 1 that 5.3 per cent of the total heat value of the food is excreted in the feces during the fore period, 3.2 per cent during the preservative period, and 4.5 per cent during the after period. Here, also, the administration of the boric acid appears to have increased to a slight extent the absorption of the heat-forming elements of the food during its passage through the alimentary canal.

In regard to the weight of feces, in the case of No. 1, it is found that the total weight is slightly increased during the preservative period due to the increase in the quantity of water therein. There is, however, no evidence of any tendency to diarrhea during the administration of the preservative.

No. 2—F. C. W.

In the case of No. 2 the percentage of nitrogen excreted in the feces during the fore period is 8.2. There is a slight diminution in the percentage excreted during the first preservative subperiod, and a very marked diminution in the percentage excreted during the second subperiod, the percentage falling to 3.2. It rises again above the normal of the fore period during the third preservative subperiod, reaching 9 per cent, the mean for the three preservative subperiods being 6.7 per cent. During the after period it rises to 7.8. Here, again, we see a tendency on the part of the preservative to increase slightly the quantity of nitrogen absorbed from the alimentary canal. In the case of the phosphoric acid, the percentage eliminated during the fore period is 34.7. There is a slight diminution during the first preservative subperiod and a very marked diminution during the second subperiod, due doubtless to the illness of the subject and diminution of the food supply. During this period the administration of the preservative was discontinued. This is followed by a great increase during the last preservative subperiod. The mean for the three preservative subperiods is 31.4 and for the after period 38. The percentage of fat in the food excreted in the feces during the fore period is 4.2; for the preservative period 2.4, and for the after period 2.1. The percentage of calories in the food excreted in the feces during the fore period is 3.9, during the preservative period 3.2, and during the after period 3.5. In all these cases it is noted that a marked difference exists between the second preservative subperiod and the other periods of this series. This is due to a profound disturbance of the digestive

functions during this period, diminishing the appetite and cutting down almost one-third the quantity of all the food administered. The higher percentage absorbed, therefore, must be construed in connection with this diminution in the supply. In regard to the character of the feces, there was a diminution in the weight of the moist feces during the preservative period due to illness and consequent diminished quantity of food. The quantity of water in the feces remains reasonably constant during the whole series. There is no tendency to diarrhea.

It might be advisable in the above case to eliminate entirely the second preservative subperiod from consideration. The disturbing factors, in any case, are so evident as to render necessary the interpretation of the data in such a way as to show their dependence upon the disturbed conditions which obtain.

No. 3—W. S. O.

The percentage of nitrogen in the food eliminated in the feces during the fore period in the case of No. 3 is 10, during the preservative period 8.5, and during the after period 8.6.. The administration of the preservative, therefore, appears to have increased the percentage of nitrogen absorbed. The percentage of phosphoric acid in the food which is voided in the feces is 26.6 for the fore period, 24 for the preservative period, and 25.5 for the after period. There appears, therefore, a tendency in this case on the part of the preservative to increase the quantity of phosphoric acid absorbed. In the case of the fat, the percentage in the food excreted in the feces is 4.9 for the fore period, 4.2 for the preservative period, and 5.6 for the after period. Again, there appears in this case a tendency on the part of the preservative to increase the absorption of the fat, which, however, is not continued through the after period. In respect of the calories, it is found that 4 per cent of the total calories in the food is excreted in the feces during the fore period, 3.6 per cent during the preservative period, and 4.7 per cent during the after period. Here, again, we see a tendency on the part of the preservative to increase the absorption of the calories in the food. The weight of the moist feces varies somewhat, falling in the preservative period and slightly falling in the after period, but rising above the preservative period. The quantity of water in the feces remains practically constant during the series, being slightly greater in the preservative period. The variations in the quantity of dry feces follow closely the variations in the weight of the moist feces. No tendency to diarrhea is manifest at any time during this series.

No. 4—E. C. S.

The percentage of nitrogen in the food eliminated in the feces in the case of No. 4 is 7.9 during the fore period, 10.8 during the preserva-

tive period, and 7.5 during the after period. This figure is calculated upon the results of observation excluding numbers for March 12 and 13. There appears a tendency in this case for the preservative to diminish the absorption of the nitrogen. In the case of the phosphoric acid it is seen that 23.9 per cent of the total amount in the food is eliminated in the feces during the fore period, 30.8 per cent during the preservative period, and 23.6 per cent during the after period. In this case also there is an apparent tendency on the part of the preservative to diminish the absorption of the phosphoric acid. In respect of the fat, it is seen that 3 per cent of the total in the food is eliminated in the feces of the fore period, 4.1 per cent in the preservative period, and 3.1 per cent in the after period. Here, also, there seems to be a marked tendency on the part of the preservative to diminish the absorption of the fat. In regard to the calories, it is seen that 3.6 per cent of the total calories in the food is eliminated in the fore period, 4.9 per cent in the preservative period, and 3.4 per cent in the after period. Here, again, we find an apparent tendency on the part of the preservative to diminish the absorption of the calories of the food. In regard to the weight of the wet feces, there is seen a marked increase during the preservative period and a marked diminution during the after period. The water content remains quite constant, being, however, slightly less in the fore period and a trifle greater in the after period. The weight of the dry feces eliminated is increased in the preservative period and diminished very markedly in the after period.

No. 5—H. C. G.

In the case of No. 5 the percentage of nitrogen in the food eliminated in the feces during the fore period is 7.3, during the preservative period 7.6, and during the after period 6.9. The data for the third preservative subperiod are included in the averages, although there is such a marked diminution of digestive activity in this period as to cause a loss of appetite and a failure to eat the regular amount of rations. In regard to the phosphoric acid, 31.1 per cent of the amount in the food is eliminated in the feces in the fore period, 33.1 per cent in the preservative period, and 30.2 per cent in the after period. Of the fat, 4.7 per cent of the fat in the food is eliminated in the feces in the fore period, 3.8 per cent in the preservative period, and 3.1 per cent in the after period. In the case of the calories, 3.8 per cent of the amount in the food is eliminated in the feces in the fore period, 3.7 per cent in the preservative period, and 3.6 per cent in the after period.

These data show but little effect of the preservative in disturbing the relations of the percentages of the various elements eliminated in the feces during the three periods of the series. If, however, we should eliminate the data for the third preservative subperiod, obtained

during a time of profound disturbance of the digestive functions, it would appear that the administration of the preservatives tended to decrease the absorption of nitrogen, phosphoric acid, fat, and calories.

No. 6—L. M. S.

No. 6 was ill during the first part of the preservative period and received no boric acid. The data in his case are therefore of no comparative value. They are inserted, however, as a record of value in respect of the principles of nutrition.

SUMMARY.

For comparative purposes the summary includes the data of only four of the six members of the table, as the data in the case of the other two are so imperfect as to be unsuitable for comparative purposes.

Comparing the data for the four members of the table for the whole series (viz. Nos. 1, 3, 4, and 5), we find that the average weight of the moist feces per day in the fore period is 121.8 grams, and of the dry feces 26 grams, for the preservative period 124.8 and 24.7, and for the after period 116.3 and 23.7. It is seen from these data that there is a progressive diminution in the quantity of dry feces voided during the series. There is also a slight increase in the percentage of water in the feces during the administration of the boric acid. This indicates a tendency on the part of the boric acid to increase the exudations from the membranes of the intestines. The diminished quantity of the food, due doubtless to an interference with the appetite by reason of the administration of the boric acid, apparently is the cause of the diminished quantity of dry feces. In respect of the percentage of the nitrogen eliminated it is found that in the fore period 8.3 per cent of the total nitrogen in the food appears in the feces, during the preservative period 8.4 per cent, and during the after period 7.3 per cent. The general influence of the preservative, therefore, is to diminish slightly the percentage of nitrogen absorbed. There is an apparent recoil from this depression during the after period, when the percentage of nitrogen absorbed is considerably greater than in the fore period, and this in spite of the fact that a larger quantity of nitrogen is consumed in the food than in the fore period. The general tendency in regard to the nitrogenous food is first to diminish the quantity taken in the food and also to diminish the percentage eliminated. This effect is not very marked, but is still evident when all the data are considered as a whole. In regard to the phosphoric acid it is seen that 34 per cent of the total amount in the food appears in the feces in the fore period, 32.1 per cent in the preservative period, and 33.2 per cent in the after period. In this instance the effect of the preservative appears to be to increase the percentage of phosphoric acid absorbed. There is a tendency also in the after period to return to the conditions prevailing during the

fore period, as seen in the fact that the percentage of phosphoric acid absorbed is a little less during the after period than it is during the preservative period, but still somewhat greater than during the fore period. The effect of the preservative on the fat is seen in the summary of the data, showing that 5.1 per cent of all the fat in the food appears in the feces during the fore period, 4.2 per cent during the preservative period, and 3.7 per cent during the after period. The tendency in this case is the same as regards the phosphoric acid, namely, to increase slightly the absorption of the fat during the preservative period. In regard to the calories it is seen that there is little difference between the fore period and the preservative period in the percentage of calories in the food eliminated in the feces. During the after period, however, there is a tendency to increase the absorption of calories, only 4.1 per cent of the total amount in the food appearing in the feces in the after period, as against 4.2 per cent during the preservative period and 4.2 per cent during the fore period.

The summary shows a slightly deranging effect upon the appetite during the preservative period, as indicated by the smaller quantities of food consumed. Of course an effort has been made to have practically the same quantities of food consumed during all periods, but it is found impracticable to control absolutely the influence of the appetite, and occasionally when the appetite fails a portion of the food is weighed back and deducted from the portion issued. It is deemed better to introduce this disturbance into the data than to risk the more pronounced effect of deranging the digestion still further by insisting upon the consumption of the full ration of food when the appetite rebels. In so far as the calories are concerned, it is seen that a considerably less quantity of food is used per day during the preservative period, the average calories for this period being 2,851 as against 3,075 in the fore period. The appetite does not recover its full vigor during the after period, the quantity of food consumed being practically the same, in so far as calories are concerned, as that eaten during the preservative period.

Considering as a whole the summary of Series III, it appears that the administration of the preservative slightly affects the appetite of the class, decreases the percentage of nitrogen absorbed, increases the percentages of phosphoric acid and fat absorbed, and diminishes the percentage of the calories absorbed. In this series the individual data are often contradictory, and the interpretation of the data must be influenced to a greater or less extent by peculiarities in the individuals themselves. It seems difficult, however, to avoid the conclusion in this case that the administration of the preservative in the manner described and in the quantities indicated produces a slightly depressing or injurious effect upon the processes of digestion.

SERIES IV.

No. 7—E. R. M.

In the case of No. 7 in Series IV, the observations are made only during the fore period and the first preservative subperiod. After the completion of the first subperiod the condition of the subject was such as to render the collection of further data impracticable. A comparison therefore in the case of No. 7 is confined, necessarily, to the fore period and the first preservative subperiod of four days. It will be noted that the feces are remarkably dry during both the fore period and the preservative period, although there is an increase in water in the preservative period. During the fore period there is a marked tendency to irregularity in the movement of the bowels. This irregularity is the cause of the great discrepancy between the average daily quantity of feces eliminated in the fore period and that in the preservative period, the average difference being a little less than 10 grams per day in the dry feces. During the fore period 13.6 per cent of the nitrogen in the food is eliminated in the feces, and during the preservative period 17.7 per cent. Of the phosphoric acid, 47.4 per cent in the food is eliminated in the feces in the fore period and 57.3 per cent in the preservative period. Of the fat, 4.6 per cent is eliminated in the feces in the fore period and 5.6 per cent in the first preservative subperiod. Of the calories, 5.2 per cent is eliminated in the feces in the fore period and 6.5 per cent in the preservative period.

These data seem to indicate a tendency on the part of the preservative to restrict absorption of the elements of the food during its passage through the alimentary canal.

No. 8—J. H. E.

The data for No. 8 show that there is a disturbance in the regular action of the intestines, resulting, in several instances, in a failure to eliminate any feces during the twenty-four hours. This fact explains the great difference between the average daily amount of feces eliminated in the fore period and in the first preservative subperiod. In the other periods the equilibrium in the elimination of the feces is fairly well established. During the whole course of the observation the feces of No. 8 are dry, with no apparent tendency on the part of the preservative to increase the amount of water. The percentage of nitrogen eliminated in the feces is markedly increased during the preservative period, the average for the three subperiods being 8.5 per cent as against 5.8 per cent for the fore period. This increase continues also during the after period, in which the average percentage of nitrogen in the food eliminated in the feces is 9.2. There is also a decided increase in the percentage of phosphoric acid eliminated in the feces during the preserva-

tive period, the amount being 34.5 per cent as against 22.4 per cent in the fore period, and 31.5 per cent in the after period In the case of No. 8 there is almost a complete digestion and absorption of the fat, only 1.7 per cent of the fat in the food appearing in the feces in the fore period, 3.1 per cent as the average of the preservative period, and 3 per cent in the after period. The calorific elements of the food are also very completely absorbed in the case of No. 8, 2.1 per cent of the total calories of the food appearing in the feces in the fore period, 3.7 per cent as a mean of the preservative period, and 3.8 per cent in the after period. In this case also, as in the preceding one, there appears to be a tendency on the part of the preservative to interfere with the absorption of the valuable elements of the food during its passage through the alimentary canal.

No. 9—A. G.

With this subject we see a decided tendency to constipation, which causes a large variation in the amount of feces eliminated, which decreases through the preservative and after periods. There is little change in the percentage of nitrogen eliminated in the feces, in the fore period it being 7.6, the mean percentage for the preservative period 7.1, and for the after period 6.9. The percentage of phosphoric acid in the food eliminated in the feces during the fore period is 35.7, the mean of the preservative period 36.2, and of the after period 32.2. In the case of the fat it is seen that 4.3 per cent of the total amount in the food is eliminated in the feces during the fore period, 4.1 per cent as a mean of the preservative period, and 4.7 per cent in the after period. Of the calories in the food, 4.1 per cent are eliminated in the feces during the fore period, 3.6 per cent as a mean of the preservative period, and 3.7 per cent in the after period.

These data seem to indicate a tendency on the part of the preservative to increase the absorption of the elements of the food, with the exception of the phosphoric acid, during its transit through the alimentary canal.

No. 10—W. J. J.

In the case of this man the marked increase in the quantity of feces voided in the preservative period is due to two very large quantities discharged on the 29th and 31st of March. In the after period there is a marked decrease in the quantity voided. There is also noted a dry condition of the feces, and no tendency is noticed on the part of the preservative to increase the quantity of water therein. The percentage of nitrogen in the food eliminated in the feces in the fore period in this case is 8.8, the mean of the three preservative subperiods 9.6, and in the after period 7.8. The percentage of phosphoric acid in the food which is eliminated in the feces during the fore period is

35, the mean percentage eliminated in the preservative period 40.4, and in the after period 37.7. Of the fat in the food, 4 per cent is eliminated in the fore period, the mean of the preservative period being 4.4 and during the after period 3.2. Of the total calories in the food, 3.5 per cent are eliminated in the feces in the fore period, 4.1 per cent in the preservative period, and 3.6 per cent in the after period.

These data seem to indicate, as a result of the administration of the preservative, a diminution of the absorption of nitrogen, phosphoric acid, fat, and the calorific elements of the food during its passage through the alimentary canal.

No. 11—J. S. C.

By reason of illness the regular administration of the preservative is not practiced in the case of No. 11, and the data for the fore period as given in the summary cover only four days, beginning March 31. This insufficient time of observation is the reason of the marked discrepancy between the average quantity of feces voided during this short period (on two days of which a marked degree of constipation existed) and that voided during the long preservative period which follows. There is no marked tendency to any increase of the water content of the feces during the administration of the preservative. The percentage of nitrogen in the food which is eliminated in the feces during the fore period is 6.7, during the preservative period 9.4, and during the after period 7. A remarkably small percentage of the phosphoric acid in the food is found in the feces during the fore period, namely, 19.5 per cent, while during the preservative period it rises to 37.7, and in the after period falls to 32.3. Of the fat in the food, 2.7 per cent appears in the feces in the fore period, 3.9 in the preservative period, and 3.2 in the after period. Of the calories in the food, 3.2 per cent are found in the feces in the fore period, 4.1 in the preservative period, and 3.1 in the after period.

These data indicate that the administration of the preservative tends to diminish the absorption of the elements of the food while passing through the digestive organs.

No. 12—B. J. T.

No. 12 is irregular, as is No. 11. The fore period considered in the summary is very short, covering only three days, April 3–5. The percentage of water in the feces in this case indicates that the preservative exerts no great influence one way or the other upon the water content of the feces. Of the nitrogen in the food, 9.6 per cent appears in the feces in the fore period, 8 in the preservative period, and 11.4 in the after period. In regard to phosphoric acid, 29.6 per cent of the quantity present in the food appears in the feces in the fore

period, 32.1 per cent in the preservative period, and 39.7 per cent in the after period. Of the fat in the food, 4.2 per cent appears in the feces in the fore period, 3.7 per cent in the preservative period, and 6.8 per cent in the after period. Of the calories in the food, 3.8 per cent are found in the feces in the fore period, 3.3 in the preservative period, and 4.9 in the after period.

These data, though incomplete, are not to be wholly excluded from consideration. They indicate a slightly increased absorption of the food elements during the administration of the preservative, with the exception of phosphoric acid. On account of their fragmentary and imperfect nature, however, too great weight must not be given to the interpretation placed upon them.

SUMMARY.

By reason of the disturbance produced at various times among the different members of the table during Series IV, it is not possible to bring together in a summary a comparison of the data relating to the whole number. Only partial comparisons can be made. A comparison can be made between Nos. 11 and 12 for a brief fore period, one complete preservative period, and one complete after period. These data show that the water in the feces remains practically the same during the fore period and the preservative period, but is considerably diminished during the after period, falling to 74.73 per cent. The quantity of wet and dry feces throughout the period of comparison is small. The percentage of nitrogen in the food which is eliminated in the feces by the two members during the fore period is 8.2, during the preservative period 8.7, and during the after period 9. There is in this case an apparent progressive interference with the absorption of the nitrogenous elements of the food. In phosphoric acid the quantity appearing in the feces in the fore period is 24.4 per cent, in the preservative period 35.5, and during the after period 35.6. The use of the preservative seems to diminish the quantity of phosphoric acid absorbed. In the case of the fat we find in the feces during the fore period 3.3 per cent of the total quantity in the food, in the preservative period 3.8 per cent, and in the after period 4.6 per cent. As in the case of the nitrogen, there appears to be a manifestation here toward a progressive interference with the absorption of the fat. In regard to the calories, it is seen that of the total amount in the food 3.5 per cent appear in the feces in the fore period, 3.7 in the preservative period, and 3.9 in the after period. Here again it is also noticed that the preservative seems to interfere with the absorption of the heat-producing elements.

A summary may also be made of the data relating to Nos. 7, 8, 9, 10, and 12 of Series IV for the fore period and for the first preservative subperiod, but no complete comparison can be made of these members

to any further extent. An inspection of the data obtained in this summary shows an increase in the amount of feces voided during the preservative period, and a very slight increase in the content of water therein, but nothing of a notable character. Of the nitrogen in the food. 9.4 per cent appears in the feces during the fore period and 12.1 per cent in the preservative period. Of the phosphoric acid in the food, 37.8 per cent appears in the feces in the fore period and 48.2 in the preservative period. Of the fat in the food, 4.3 per cent appears in the feces in the fore period and 5.2 in the preservative period. Of the calories in the food, 4 per cent appears in the feces in the fore period and 5.1 per cent in the preservative period. These data show a marked tendency on the part of the preservative to decrease the absorption of the nitrogen, the phosphoric acid, the fat, and the calories.

Although the data are not complete in every instance, it is possible to make a comparison during the whole period of Series IV on Nos. 8, 9, and 10, as indicated in the summary of the data for these three subjects. In respect of the quantity of the feces voided, a considerable increase is seen during the preservative period, the fore period and the after period having an almost identical quantity. There is little change noted in the percentage of water in the feces, there being a little less, however, during the preservative period and the after period than in the fore period. The quantity of nitrogen administered daily in the food is slightly smaller in the preservative period than in the fore period, and considerably smaller in the after period than in either. The quantity of phosphoric acid administered in the food is almost exactly the same in the fore period and preservative period and a little less in the after period. The quantity of fat in the food consumed in the fore period is somewhat greater than that consumed in the preservative period, and the latter greater than that in the after period. The calories in the food during the fore period are slightly greater than in the preservative period and very decidedly greater than in the after period.

These data seem to indicate a progressive tendency on the part of the preservative to lessen the appetite, and this tendency is continued during the after period, which is not surprising when it is considered that the whole of the after period is required to eliminate the traces of the preservative from the body. In respect of the relative absorption of the elements of the food it is seen that, in the case of nitrogen, of the total quantity in the food 7.5 per cent appears in the feces in the fore period, 8.4 per cent in the preservative period, and 8 per cent in the after period. Of the phosphoric acid in the food, 31.4 per cent appears in the feces in the fore period, 37 per cent in the preservative period, and 33.3 per cent in the after period. Of the total quantity of fat in the food, 3.3 per cent appears in the feces in the fore period,

3.8 per cent in the preservative period, and 3.6 per cent in the after period. Of the total calories in the food, 3.2 per cent appears in the feces in the fore period, 3.8 per cent in the preservative period, and 3.7 per cent in the after period. These rather incomplete data indicate a tendency on the part of the preservative to diminish the absorption of the nitrogen, the phosphoric acid, the fat, and the calories.

Series V.

In some respects this is the most important of the series by reason of its long duration and for the further reason that the quantity of preservative administered during this period is approximately that which might be taken in the regular consumption of foods preserved with borax or boric acid. The data of this series also are little affected by reason of illness or extraneous causes during the progress of the work and are, therefore, reasonably full and continuous.

The fore period of this series begins on April 24 and continues until May 1, inclusive. The preservative period begins on May 2 and continues until June 20, inclusive. The after period begins June 21 and continues until June 29, inclusive. The quantity of boric acid given during this period to each subject is one-half gram per day, with a few exceptions. This is given in capsules and with the precautions which have already been noted.

No. 1—J. N.

In the case of No. 1, of Series V, it is seen that the moisture in the feces during the fore period is 79.68 per cent, during the preservative period 80.33 per cent, and during the after period 78.08 per cent. There is evidently a slight tendency in this case for the preservative to increase the quantity of water in the feces. The dry matter in the feces is 28 grams per day for the fore period, 33.6 grams per day for the preservative period, and 43.2 grams per day for the after period. There is a progressive increase noticed in this case which is very marked during the after period. The percentage of nitrogen in the food appearing in the feces during the fore period is 7.1, during the preservative period 7.9, and in the after period 10. The increase in the percentage of nitrogen in the feces appears to be of the same magnitude as the increase in the total quantity of dry substance and seems to have little, if any, relation to the administration of the preservative. Of the phosphoric acid in the food, 51.2 per cent appears in the feces during the fore period, 52.9 during the preservative period, and 60.4 during the after period. The same rate of increase in the percentage eliminated is found as in the case of nitrogen and of the solid matter in the feces. Of the total fat in the food, 3.1 per cent appears in the feces in the fore period, 3.8 per cent in the preservative period, and 5.7 per cent in the after period. Of the total calories in the food, 3.4 per cent

appear in the feces in the fore period, 4.3 per cent in the preservative period, and 6 per cent in the after period.

The data in this case are of little value in judging of the effect of the preservative upon the percentage of the food elements eliminated during the preservative period as compared with the fore period, since the rate of increase is found in each case to be larger in the after period, and this increase is not explicable on any ground in connection with the administration of the preservative itself. So far as the quantity of food is concerned, as measured by its elements, we find that during the fore period the average daily quantity of nitrogen consumed is 17.43 grams, during the preservative period 18.69 grams, and during the after period 18.58 grams. Of phosphoric acid, 4.74 grams was consumed in the fore period, 4.82 grams in the preservative period, and 5.04 grams in the after period. Of fat, we find the daily amount consumed in the fore period is 121.43 grams, in the preservative period 124.7 grams, and in the after period 128.56 grams. The calorific value of the food during the fore period, daily, is 3,472 units, during the preservative period 3,438 units, and during the after period 3,378 units. Thus it does not appear that the increased elimination of the food elements, so marked during the after period, could have been due to any corresponding increase in the quantity of food consumed.

No. 2—F. C. W.

The percentage of moisture in the feces of No. 2 during the fore period is 79.18, during the preservative period 78.75, and during the after period 76.39. There appears to be no tendency in this case on the part of the preservative to increase the quantity of moisture in the feces, although they become much dryer when the preservative is withdrawn. The total quantity of dry substance in the feces during the fore period is 22.4 grams, during the preservative period 25.1 grams, and during the after period 31.4 grams. The percentage of nitrogen in the food eliminated during the fore period is 6.1, during the preservative period 8.3, and during the after period 8.4. There seems in this case to be a tendency on the part of the preservative to diminish the percentage of the nitrogenous elements of the food absorbed. Of the phosphoric acid in the food, 33.8 per cent is eliminated in the feces during the fore period, 40.3 per cent in the preservative period, and 46.4 per cent in the after period. There is an apparent tendency in this case on the part of the preservative to diminish the absorption of phosphoric acid, and this tendency continues, and even increases, during the after period. Of the fat in the food, 2.1 per cent is eliminated in the feces in the fore period, 2.8 per cent in the preservative period, and 4.1 per cent in the after period. In this case, also, there seems to be a tendency on the part of the preservative to diminish the percentage of fat absorbed, and this tendency

increases in a very marked degree during the after period. Of the calories in the food, 2.7 per cent appear in the feces in the fore period, 3.8 per cent in the preservative period, and 4.8 per cent in the after period. In this instance we again see a tendency on the part of the preservative to diminish the absorption of the calorific elements of the food, and this tendency increases during the after period. In this case we have practically the same effect as is noted in the case of No. 1, namely, a progressive decrease in the amount of nutrients absorbed during the preservative period, and a notable accentuation of this condition during the after period.

No. 3—W. S. O.

The percentage of water in the feces of No. 3 during the fore period is 79.07, during the preservative period 78.09, and during the after period 75.13. There is a slight tendency manifest in this case to decrease the quantity of water in the feces during the preservative period, and this tendency becomes very marked during the after period. The total solids in the feces during the fore period are 24.7 grams, during the preservative period 26.3, and during the after period 35.6. Here is seen a progressive increase in the quantity of solids in the feces under the administration of the preservative, and this increase is greatly accentuated during the after period. Of the nitrogen in the food, 10.5 per cent appears in the feces in the fore period, 9.4 per cent in the preservative period, and 10.1 per cent in the after period. In this instance there is an apparent tendency on the part of the preservative to increase the quantity of nitrogen absorbed. Of the phosphoric acid in the food, 38.6 per cent appears in the feces in the fore period, 35.2 per cent in the preservative period, and 38.7 per cent in the after period. These data show an apparent tendency on the part of the preservative to increase the quantity of phosphoric acid absorbed. Of the total fat in the food, 6.6 per cent appear in the feces in the fore period, 5.7 in the preservative period, and 7.2 in the after period. In this case, also, there is an apparent tendency on the part of the preservative to increase the absorption of the fat. Of the total calories in the food, 4.3 per cent appear in the feces in the fore period, 4.2 in the preservative period, and 5.1 in the after period. We have again in this case a tendency on the part of the preservative to increase the absorption of the calorific elements of the food. The data in the case of No. 3, as will be seen, do not coincide in their general tendency with those of Nos. 1 and 2.

No. 4—E. C. S.

This subject withdrew from the table May 25, before the completion of the preservative period. The data in his case are therefore not given here, but may be found in the detailed tables.

No. 5—H. C. G.

The percentage of water in the feces of No. 5 in the fore period is 72.01, in the preservative period, 70.64, and in the after period, 69.01. The composition of the feces in this case is quite unique, the percentage of water being so far below that of any other subject connected with the experiment. There is evidently a slight tendency under the administration of the preservative to diminish the quantity of water in the feces. The total solid matter in the feces in the fore period, daily, is 26.9 grams, during the preservative period, 30.3 grams, and during the after period, 31.7 grams. The percentage of nitrogen in the food eliminated in the feces in the fore period is 7.5, in the preservative period, 7.5, and in the after period, 8.4. Of the phosphoric acid in the food, 34.8 per cent appear in the feces in the fore period, 41.2 in the preservative period, and 42.9 in the after period. There appears to be a tendency on the part of the preservative in this case to diminish the absorption of the phosphoric acid. Of the fat in the food, 2.4 per cent appears in the feces in the fore period, 3.4 per cent in the preservative period, and 4.1 per cent in the after period. There is here an apparent tendency on the part of the preservative to diminish the quantity of fat absorbed, and this tendency continues during the after period. Of the total calories in the food, 3.2 per cent appear in the feces in the fore period, 3.8 per cent in the preservative period, and 4.5 per cent in the after period. In this case, also, there is a tendency during the preservative period to diminish the quantity of the calorific elements of the food absorbed, and this tendency is considerably increased during the after period. Of the total heat value of the food, we find that it amounted to 3,861 calories per day in the fore period, 3,500 in the preservative period, and 3,393 in the after period. There appears to be a tendency here to a diminution in the amount of calories required under the administration of the preservative, and this tendency is increased in the after period.

No. 6—B. J. T.

No. 6 did not finish the preservative period. The data referring to him are therefore not discussed here.

SUMMARY.

For the three subjects who completed the observations in Series V, the following summary may be made: The average content of water in the feces in the fore period is 77.41, for the preservative period 77.08, and for the after period 75.05. The total quantity of solid matter in the feces in the fore period is 26.5, in the preservative period 30.1, in the after period 36.8. The total percentage of nitrogen in the food eliminated in the feces in the fore period is 8.2, in the preservative period 8.2, and in the after period 9.5. Of the phosphoric acid in the food the average quantity eliminated daily in the fore period is

41.5 per cent, in the preservative period 43.8, and in the after period 47.4. Of the total fat in the food there appears in the feces in the fore period 3.4, in the preservative period 4, and in the after period 5.4. Of the total calories in the food there appears in the feces in the fore period 3.6 per cent, in the preservative period 4.1, and in the after period 5.2.

In this comparison of the three members of the table who completed the entire course, the most striking point which is brought out is the increase in the nutritive elements of the food unabsorbed during the after period. While there is a marked tendency during the preservative period, as compared with the fore period, to diminish the absorption of these nutrient elements, it is not nearly so marked as the decrease in the absorptive power manifest during the after period. It is not possible to say that these disturbances are related directly to the administration of the preservative. It seems, however, only fair to assume that the decreased percentage of absorption is directly related to the increase of the solid matter in the feces. For instance, more food, measured by its calorific power, is administered in the fore period than in the preservative period, namely, 3,365 calories in the fore period, 3,308 calories in the preservative period, and in after period 3,356. With the same degree of absorption there would have been less dry matter in the feces in the preservative period than in the fore period. In point of fact, however, there is more dry matter—an average of 3.6 grams more—corresponding to the decrease in the absorption of the nitrogenous foods and the decrease in the absorption of the calorific elements of the foods. It is of course easily understood that during a part of the after period the influence of the preservative per se continues, because it requires practically the whole of the after period to eliminate the traces of the preservative from the system. There appears in this case to be a still more profound disturbance than can be traced to this source. There is one explanation of these phenomena which is offered tentatively, but without any assertion of its accuracy. It is this: In the administration of this preservative the foreign body which it represents has a double effect. In the first place it may excite the digestive functions to renewed activity in order to eliminate the foreign element, while at the same time it may preserve a portion of the food from the operations of digestion. If the degree of excitation is less than the degree of preservation the total effect would be to decrease slightly the amount of the food elements absorbed, as indicated by the summary of the data. In the case under consideration, this ingestion of the foreign substance continues for a long while, namely, from May 2 to June 20, inclusive, a period of fifty days. The withdrawal of this artificial excitation would naturally cause, if the above assumption be true, a depression in the excitation of the glands furnishing the digestive elements. This would also

cause a profound disturbance in digestion, with a marked tendency to decrease the amount of food digested and absorbed. Thus we find that while the total calories administered during the after period are almost exactly the same as the total calories of the preservative and fore periods, the amount of solid matter left in the feces is enormously increased, with a necessarily corresponding decrease in the percentage of absorption. To be more exact, the calories in the food in the fore period are 3,365, in the preservative period 3,308, and the mean calories for the two periods are 3,336, while the value of the calories in the food in the after period is 3,356.

It is evident that when a preservative of this kind is administered over a long period of time its effect at first is not very marked. There are no profound disturbances of digestion which could be noted from any observable symptoms. There is no marked production either of nausea, a feeling of discomfort in the region of the stomach, or continued headache, as are sometimes produced when the same preservatives are administered in large quantities. There is a tendency, on the other hand, in the system to accomodate itself to the condition of affairs which obtains. There is evident an increased excitation of the glands supplying the digestive ferments, but in the case cited this increased excitation is not quite commensurate with the restricting influences upon the digestive processes. When, however, the stimulus of the preservative is withdrawn there appears a decided tendency to diminish the activity of the digestive processes and thus to increase the amount of dry substances in the feces as a result of diminished amounts of the nutrients absorbed. This theory at least is worth consideration, as it agrees with the general principle of the tendency to collapse on the withdrawal of long-continued stimulation, and also with the recorded data obtained during this long period of experiment.

TABLE XXII.—*Summary of weight and water content of feces, by series.*

SERIES I—SIX MEN.

[Figures given are averages per day.]

Date.	Feces.	Water.	Feces, dry.
Fore period:	*Grams.*	*Per ct.*	*Grams.*
No. 1	142.1	80.86	27.2
No. 2	114.0	79.65	23.2
No. 3	102.4	79.00	21.5
No. 4	125.9	78.00	27.7
No. 5	121.6	77.55	27.3
No. 6	147.4	82.97	25.1
Total (6 men 1 day)	753.4	....	152.0
Average (1 man 1 day)	125.6	79.86	25.3
Preservative period:			
No. 1	134.9	79.69	27.4
No. 2	190.8	83.91	30.7
No. 3	114.1	80.72	22.0
No. 4	135.8	81.89	24.6
No. 5	167.8	80.04	33.5
No. 6	145.6	81.66	26.7
Total (6 men 1 day)	889.0	....	161.9
Average (1 man 1 day)	148.2	81.44	27.5

TABLE XXII.—*Summary of weight and water content of feces, by series*—Continued.

SERIES I—SIX MEN—Continued.

Date.	Feces.	Water.	Feces, dry.
After period:	*Grams.*	*Per ct.*	*Grams.*
No. 1	148.0	78.11	32.4
No. 2	131.1	77.88	29.0
No. 3	95.1	77.39	21.5
No. 4	157.7	81.04	29.9
No. 5	155.6	79.56	31.8
No. 6	125.1	79.86	25.2
Total (6 men 1 day)	812.6	....	169.8
Average (1 man 1 day)	135.4	79.10	28.3

SERIES II—TWO MEN.

Date.	Feces.	Water.	Feces, dry.
Fore period:			
Total (2 men 1 day)	253.9	....	62.9
Average (1 man 1 day)	127.0	75.20	31.5
Preservative period:			
Total (2 men 1 day)	305.7	....	70.5
Average (1 man 1 day)	152.9	76.91	35.3

After period dropped.

SERIES II—THREE MEN.

Date.	Feces.	Water.	Feces, dry.
Fore period:			
No. 7	119.1	74.65	30.2
No. 10	134.8	75.74	32.7
No. 12	115.4	76.95	26.6
Total (3 men 1 day)	369.3	....	89.5
Average (1 man 1 day)	123.1	75.80	29.9
Preservative period:			
No. 7	167.5	78.75	35.6
No. 10	138.2	74.75	34.9
No. 12	104.5	76.18	24.9
Total (3 men 1 day)	410.2	....	95.4
Average (1 man 1 day)	136.7	76.74	31.8

After period dropped.

SERIES III—FOUR MEN.

Date.	Feces.	Water.	Feces, dry.
Fore period:			
No. 1	163.2	80.76	31.4
No. 3	106.2	78.15	23.2
No. 4	101.4	77.81	22.5
No. 5	116.4	76.80	27.0
Total (4 men 1 day)	487.2	....	104.1
Average (1 man 1 day)	121.8	78.65	26.0
Preservative period:			
No. 1	165.8	82.81	28.5
No. 3	95.3	79.75	19.3
No. 4	120.3	79.14	25 1
No. 5	117.8	78.18	25.7
Total (4 men 1 day)	499.2	....	98.6
Average (1 man 1 day)	124.8	80.20	24.7
After period:			
No. 1	151.6	80.80	29.1
No. 3	96.6	77.85	21.4
No. 4	93.2	81.33	17.4
No. 5	123.9	78.29	26.9
Total (4 men 1 day)	465.3	....	94.8
Average (1 man 1 day)	116.3	79.62	23.7

Table XXII.—*Summary of weight and water content of feces, by series*—Continued.

SERIES IV—THREE MEN.

Date.	Feces.	Water.	Feces, dry.
Fore period:	*Grams.*	*Per ct.*	*Grams.*
No. 8	81.9	75.58	20.0
No. 9	130.9	77.69	29.2
No. 10	108.2	76.34	25.6
Total (3 men 1 day)	321.0	....	74.8
Average (1 man 1 day)	107.0	76.73	24.9
Preservative period:			
No. 8	124.4	75.56	30.4
No. 9	118.8	77.10	27.2
No. 10	132.0	75.38	32.5
Total (3 men 1 day)	375.2	....	90.1
Average (1 man 1 day)	125.1	76.02	30.0
After period:			
No. 8	126.7	77.90	28.0
No. 9	115.7	77.61	25.9
No. 10	81.8	70.42	24.2
Total (3 men 1 day)	324.2	....	78.1
Average (1 man 1 day)	108.1	75.95	26.0

SERIES IV—TWO MEN.

Fore period:			
No. 11	60.0	77.67	13.4
No. 12	110.3	78.42	23.8
Total (2 men 1 day)	170.3	....	37.2
Average (1 man 1 day)	85.2	78.17	18.6
Preservative period:			
No. 11	134.9	78.35	29.2
No. 12	96.7	77.87	21.4
Total (2 men 1 day)	231.6	....	50.6
Average (1 man 1 day)	115.8	78.15	25.3
After period:			
No. 11	87.9	76.45	20.7
No. 12	97.3	73.28	26.0
Total (2 men 1 day)	185.2	....	46.7
Average (1 man 1 day)	92.6	74.73	23.4

SERIES IV—FIVE MEN.

Fore period:			
No. 7	110.7	73.44	29.4
No. 8	81.9	75.58	20.0
No. 9	130.9	77.69	29.2
No. 10	108.2	76.34	25.6
No. 12	117.2	71.50	33.4
Total (5 men 1 day)	548.9	....	137.6
Average (1 man 1 day)	109.8	74.95	27.5
Preservative period:			
No. 7	158.4	75.38	39.0
No. 8	151.6	73.88	39.6
No. 9	149.8	79.24	31.1
No. 10	161.1	75.29	39.8
No. 12	92.2	72.89	25.0
Total (5 men 1 day)	713.1	....	174.5
Average (1 man 1 day)	142.6	75.53	34.9

TABLE XXII.—*Summary of weight and water content of feces, by series*—Continued.

SERIES V—THREE MEN.

Date.	Feces.	Water.	Feces, dry.
Fore period:	*Grams.*	*Per ct.*	*Grams.*
Total (3 men 1 day)	351.9	....	79.6
Average (1 man 1 day)	117.3	77.41	26.5
Preservative period:			
Total (3 men 1 day)	394.0	....	90.2
Average (1 man 1 day)	131.3	77.08	30.1
After period:			
Total (3 men 1 day)	442.6	....	110.5
Average (1 man 1 day)	147.5	75.05	36.8

SERIES V—FOUR MEN.

Date.	Feces.	Water.	Feces, dry.
Fore period:			
No. 1	137.8	79.68	28.0
No. 2	107.6	79.18	22.4
No. 3	118.0	79.07	24.7
No. 5	96.1	72.01	26.9
Total (4 men 1 day)	459.5	....	102.0
Average (1 man 1 day)	114.9	77.81	25.5
Preservative period:			
No. 1	170.8	80.33	33.6
No. 2	118.1	78.75	25.1
No. 3	120.0	78.09	26.3
No. 5	103.2	70.64	30.3
Total (4 men 1 day)	512.1	....	115.3
Average (1 man 1 day)	128.0	77.50	28.8
After period:			
No. 1	197.1	78.08	43.2
No. 2	133.0	76.39	31.4
No. 3	143.2	75.13	35.6
No. 5	102.3	69.01	31.7
Total (4 men 1 day)	575.6	....	141.9
Average (1 man 1 day)	143.9	75.33	35.5

THE URINE.

NITROGEN AND PHOSPHORIC ACID ELIMINATED.

The quantities and percentages of nitrogen and phosphoric acid eliminated in the urine are important data in the study of the influence of an added preservative upon metabolism. The quantities of each of these substances in the food, the quantities eliminated, and the percentages eliminated are given in Tables XLV–LXVI. (See appendix.)

SERIES I.

NITROGEN.

The total quantity of nitrogen found in the urine during the fore period of Series I is 459.991 grams, an average daily quantity of 13.53 grams for each man. The total quantity of nitrogen in the food corresponding to this amount in the urine is 583.941 grams, or 17.17 grams a day for each man. The average percentage of the total nitrogen eliminated in the urine varies greatly in different individuals. It

is the highest in No. 6, reaching 88.3 per cent, and lowest in No. 3, falling to 68.7 per cent. The mean percentage eliminated for the six subjects is 78.8 per cent.

During the preservative period the total quantity of nitrogen appearing in the urine is 1,068.77 grams, a daily average of 14.06 grams per man. The nitrogen in the corresponding food is 1,299.56 grams, an average of 17.10 grams per man. The percentage eliminated, as in the first instance, varies with the different subjects, the highest being in the case of No. 6, namely, 93.6 per cent, and the lowest in the case of No. 5, namely, 76.4 per cent. The mean percentage eliminated is 82.2 per cent.

In the after period the total quantity of nitrogen found in the urine is 808.35 grams, an average of 13.7 grams per day for each individual. The percentage of nitrogen eliminated in the urine varies widely with the different individuals. The highest percentage was in the case of No. 4, namely, 82.8 per cent, and the lowest in No. 3, namely, 75.1 per cent. The mean percentage is 80.3.

The above data indicate that the administration of the preservative slightly increased the quantity of nitrogen excreted by the urine.

PHOSPHORIC ACID.

The quantity of phosphoric acid which appears in the urine during the fore period is 92.579 grams, amounting to 2.572 grams a day for each individual. The phosphoric acid in the corresponding food is 147.158 grams, a daily average of 4.088 grams for each man. The highest percentage eliminated is found in the case of No. 6, namely, 78.1, and the lowest in the case of No. 1, namely, 52.3. The mean percentage of phosphoric acid eliminated in the urine is 62.9.

In the preservative period 194.378 grams of phosphoric acid appear in the urine, equivalent to 2.49 grams a day for each man. The phosphoric acid in the corresponding food is 299.393 grams, or 3.838 grams a day for each man. The largest percentage of phosphoric acid was excreted in the case of No. 4, namely, 73.9, and the smallest in the case of No. 5, namely, 57.5. The mean percentage of phosphoric acid excreted in the urine for the preservative period is 64.9.

The quantity of phosphoric acid appearing in the urine during the after period is 145.751 grams, equivalent to 2.429 grams per day for each individual. Corresponding to this quantity there are 229.25 grams in the food, equivalent to 3.82 grams per day for each person. The largest percentage of phosphoric acid excreted was in the case of No. 6, namely, 76.2 per cent, and the smallest percentage is found in the case of No. 1, namely, 51.9 per cent. The mean percentage excreted is 63.6. The above data show a very slight influence on the part of the preservative to increase the excretion of phosphoric acid.

Series II.

The data in the second series, as has already been intimated, were rendered very incomplete by reason of illness of the members of the table. The only completed data which are comparable throughout the whole period are those of Nos. 7 and 10 for the preliminary and preservative periods. The preservative period extended from January 28 to February 10, but the data obtained for February 9 and 10 were so abnormal as to make it extremely likely that there was some unrecorded loss of excrement. The data for these two days are therefore excluded from the summary, and the preservative period is considered as ending with February 8. By reason of the illness of all the members of this class, there was no after period.

NITROGEN.

In the case of No. 7, without going into detail, attention is called to the fact that the percentage of nitrogen eliminated in the fore period is 85.2, while the total percentage eliminated in the three preservative subperiods, extending from January 28 to February 8, is 76.2. In this case the preservative appears to have had the effect of diminishing the percentage of nitrogen excreted. In the case of No. 8 the percentage of nitrogen eliminated in the fore period is 77.1; in the three preservative subperiods, 79.7. In this case the preservative appears to have had the effect of increasing the excretion of nitrogen. In the case of No. 9 the percentage excreted during the fore period is 80.3. During the three preservative subperiods (during the third one of which, however, the subject was very ill) the percentage excreted was 88.2. These data are of little value for comparative purposes because of the serious illness of No. 9 during a large part of the experimental period. In the case of No. 10 the percentage excreted during the fore period is 75.6, and for the three preservative subperiods 79.9. These data indicate a stimulating effect of the preservative upon the excretion of nitrogen. They are, however, by reason of the facts already set forth, of little value for comparative purposes. In the case of No. 11 the percentage of nitrogen excreted during the fore period is 75.5, and during the three preservative subperiods 82.6. In this case the administration of the preservative appears to have considerably increased the excretion of nitrogen. In the case of No. 12 the percentage of nitrogen excreted during the fore period is 60.6, and during the three preservative subperiods 86.6. These data are very irregular, and, by reason of the illness of the subject, are of little value for comparative purposes.

The summary for Nos. 7 and 10, who completed the preservative period, shows 80.1 per cent of nitrogen excreted in the fore period, and 78.2 in the preservative period. These data indicate a slight

tendency of the boric acid to diminish the elimination of nitrogen in the urine. In the summary for Nos. 7, 10, and 12, however, the opposite tendency is shown.

PHOSPHORIC ACID.

The percentage of phosphoric acid eliminated in the case of No. 1 in the fore period is 58.4, in the preservative period, 58.8. In the case of No. 2 the percentage eliminated in the fore period is 58.4, and in the preservative period 61, a decided increase. For No. 3 the figures are as follows: Fore period, 57.4; for the first and third subperiods, 57.8 (subject not in the second subperiod). No. 4 shows in the fore period an elimination of 53.7 per cent, and in the preservative period 61.6 per cent, a very marked increase. In the case of No. 5 the percentage in the fore period is 57.1, in the preservative period 59.2, again showing an increase. For No. 6 the fore period shows 50 per cent of elimination, while the preservative period shows 65.5 per cent, the largest increase noted. The summary for phosphoric acid shows the following figures, considering only Nos. 7 and 10: During the fore period the per cent eliminated in the urine is 55.8, while in the preservative period it is 60.4 per cent. This marked increase is undoubtedly due in part to the fact that all the members of this series were ill with the grippe.

SERIES III.

NITROGEN.

The highest percentage of nitrogen eliminated in the urine in the fore period is 94.2, the lowest is 78.3, and the mean for the 4 men who finished the series is 86.6. In the preservative period the highest percentage is 104.6, while the lowest is 81.1, and the mean for the 4 men is 87.3. In the after period the highest percentage is 85, the lowest is 69.9, and the mean is 76.2. These figures indicate a slight increase in the preservative period and a marked decrease in the after period.

PHOSPHORIC ACID.

The highest percentage of phosphoric acid eliminated in the fore period of Series III is 64, the lowest is 52.8, while the mean for the 4 men who completed the series is 59.5. In the preservative period the highest elimination is 78.2 per cent, the lowest is 59.8, and the mean is 68.2. In the after period the highest is 55.6 per cent, the lowest 48.8, and the mean 52.6. These figures show a marked tendency toward an increased excretion of phosphoric acid in the urine during the preservative period, followed by a decided decrease during the after period.

Series IV.

NITROGEN.

The highest percentage of nitrogen eliminated in the fore period is 95.2, the lowest is 71.2, and the mean for the 3 men completing the series is 86.6. In the preservative period the highest is 89.3, the lowest is 78, and the mean is 83. In the after period the highest percentage eliminated is 91.4, the lowest is 81.7, and the mean is 87.1. These data seem to indicate a marked tendency on the part of the preservative to diminish the percentage of nitrogen eliminated, with a pronounced tendency to recover in the after period.

PHOSPHORIC ACID.

The highest percentage of phosphoric acid eliminated in the fore period is 59.6, the lowest is 48.3, and the mean for 3 men is 57.9. In the preservative period the highest percentage eliminated is 68.5, the lowest for the full period is 59.4, and the mean is 60.8. In the after period the highest percentage is 65.3, the lowest is 60.2, and the mean is 61.3. The preservative therefore seems to have had but little effect in influencing the elimination of phosphoric acid in the urine, but what effect was produced was in the direction of increasing the elimination.

Series V.

NITROGEN.

The highest percentage of nitrogen eliminated in the fore period is 101.4, the lowest is 85.4, and the mean for 3 men is 95.3. In the preservative period the highest percentage eliminated is 91.4, the lowest is 82.4, and the mean is 87.6. In the after period the highest percentage is 91.7, the lowest is 78.1, and the mean is 85.1. These figures show a progressive decrease in the percentage of nitrogen eliminated.

PHOSPHORIC ACID.

The highest percentage of phosphoric acid eliminated in the fore period is 88.1, the lowest is 59.8, and the mean for 3 men is 70.2. In the preservative period the highest percentage eliminated is 77.2, the lowest is 57.7, and the mean is 63.9. In the after period the highest percentage is 61.7, the lowest is 54.7, and the mean is 59. These figures indicate that the preservative tends to diminish the percentage of phosphoric acid eliminated in the urine, and this tendency is continued in the after period.

General Summary.

It is advisable now to bring into one summary the results of all the series. This has been done in Tables LV and LXVI. (Appendix.)

NITROGEN.

The mean percentage of nitrogen eliminated in all series (except Series II) for all cases where complete observations are made, is, during the fore periods, 86; during the preservative periods, 85.5, and during the after periods, 81.4. Guided by the preponderance of the testimony, and in spite of the fact that in individual cases the data are contradictory, it is seen that the general tendency of the preservative is to diminish the percentage of nitrogen eliminated in the urine and that this tendency is continued through the after period. This continuance of the effect of the preservative is only an additional evidence of the conclusion above stated. In point of fact, during at least half of the after period the preservative remains in considerable, but diminishing, quantities in the system, and the habits of excretion which are set up during the administration of the preservative continue for some time, even after notable quantities of the preservative are no longer present.

PHOSPHORIC ACID.

In the case of the phosphoric acid we have the following data: The percentage of the phosphoric acid eliminated in the urine of all the series (except Series II) is 62 in the fore period, 64.1 in the preservative period, and 59.6 in the after period. Here the tendency seems to be opposite to that exhibited in the case of nitrogen. There is an increase in the excretion of phosphoric acid during the preservative period; unlike the nitrogen, however, this increase does not persist during the after period.

REACTION.

In Tables XXIII–XXVII (p. 163) is given the reaction of the urine as determined upon the whole of the daily sample. Attention should be called to the fact that some time elapsed in each case between the collection of the first part of the daily sample and the end of the day, when all the samples were combined and the reaction taken. The samples were kept always in a cool place, except in cases where they were secured at the rooms of the members of the table. We can not be certain that instructions to keep the sample bottle in a cool place were always followed in these cases. In any case, the tendency of the urine to change its reaction on standing must be taken into account, as in some instances parts of the sample may probably have stood for twenty hours, or even longer, before the final test for the reaction was applied. The reactions given are qualitative only and are entered as strongly acid, acid, amphoteric, and alkaline.

SERIES II.

Discussing the data as a whole, we find in the cases of Nos. 7 and 10, who are compared for the fore and preservative periods, that dur-

ing the fore period the urine is strongly acid in 22.2 per cent of the cases, and in the preservative period in 53.6 per cent. It is acid in the fore period in 61.1 per cent, and in the after period in 35.7 per cent. It is amphoteric in the fore period in 16.7 per cent of the cases, and in the preservative period in 10.7 per cent. In the case of No. 7 only, the urine is strongly acid in the after period in 20 per cent of the cases, acid in 40 per cent, and amphoteric in 40 per cent. These data show a strong tendency on the part of the boric acid, which was the preservative administered in this case, to render the reaction of the urine strongly acid, at the expense both of the acid reaction and of the amphoteric reaction.

In the case of Nos. 8, 9, 10, 11, and 12 a more general comparison can be made, on which the following remarks may be based: In the fore period 15.5 per cent of the samples are strongly acid, in the preservative period 30.3 per cent, and in the after period 20 per cent. In the fore period 55.5 per cent of the samples are acid, 44.6 per cent in the preservative period, and 30 per cent in the after period. Twenty-eight and nine-tenths per cent of the samples are amphoteric in reaction in the fore period, 23.2 per cent in the preservative period, and 45 per cent in the after period. None of the samples is akaline in the fore period, 1.8 per cent in the preservative period, and 5 per cent in the after period. Attention should be called, however, to the fact that the after period here was a very unsatisfactory one and the examination of the urine was practically the only metabolic control which was secured in these cases in the after period. The condition of the subjects was such in this period that no further control was attempted.

The general inference from the above data is that the administration of the boric acid tends to increase the strong acidity of the urine.

Series III.

In Series III a better comparison of the reactions of the urine was secured, which is given in Table XXIV, both for each individual member of the table and as a whole. Taking the general averages, it is found that in the fore period 11.9 per cent of the samples are strongly acid, in the preservative period 36.9 per cent, and in the after period 56.4 per cent. Sixty-one and three-tenths per cent of the samples in the fore period are entered as acid, 33.4 per cent in the preservative period, and 26.6 per cent in the after period. Twenty-six and eight-tenths per cent of the samples are found to be amphoteric in the fore period, 29.7 per cent in the preservative period, and 17 per cent in the after period.

The general data in this series seem to indicate a tendency on the part of the preservative to increase the strong acidity of the urine, and this tendency is manifested even to a greater degree during the after period, during a part of which, of course, the boric acid contin-

ued to be excreted. There is a good deal of irregularity in the case of the individual members of the class, which will be indicated sufficiently by reference to the tabular statements. It is worthy of note, however, that during the whole of this series no sample of the urine showed an alkaline reaction.

Series IV.

In Series IV boric acid was replaced by borax, and it is interesting to study the effect which this change had upon the reaction of the urine.

In the case of No. 8, 5.5 per cent of the samples during the preservative period were found to be alkaline. In the case of No. 9 the alkalinity did not appear until the after period, during which 12.5 per cent of the samples showed an alkaline reaction. The same is true of No. 10. In the case of No. 11 there was no alkaline reaction, but the number of samples that were acid fell from 50 per cent in the fore period to 9.1 per cent in the preservative period, while those marked as amphoteric rose from 25 per cent in the fore period to 90.9 per cent in the after period. Thus the tendency to diminished acidity was very strongly marked in the case of No. 11, although no actual alkaline reactions were noticed. In the case of No. 12 a remarkable change in the same direction was also manifested. The number of samples that were acid in the fore period was 50 per cent, while in the preservative period there was none, whereas the number marked amphoteric rose from 37.5 per cent to 88.8 per cent, and 11.1 per cent of the samples in the preservative period gave an alkaline reaction. In the case of No. 7, who withdrew at the end of the preservative period, we see also a marked tendency to diminish the strongly acid reaction, although in no case was there an alkaline reaction.

The best comparisons in this instance are made between Nos. 8, 9, and 10, who completed in an even manner the whole of the series. In this comparison it is seen that during the fore period the per cent of samples strongly acid was 25, during the preservative period 7.4, and none during the after period. The effect of the borax, therefore, in diminishing strong acidity was very marked and extended through the after period. The samples acid in the fore period included 54.1 per cent, in the preservative period 64.8, and in the after period 37.5. Those that gave an amphoteric reaction in the fore period included 20.8 per cent of the samples, during the preservative period 25.9 per cent, and during the after period 54.2 per cent. During the fore period there were no samples giving an alkaline reaction, during the preservative period 1.8 per cent gave an alkaline reaction, and during the after period 8.3 per cent.

These data show the very marked effects of the borax toward diminishing acidity and would indicate that all, or at least a large

quantity, of the borax appeared in the urine in an undecomposed state—that is, not as boric acid, but as biborate of soda.

It will be of interest also to include all of the data for Series IV in one average. Discussing these data, we find the same general effect produced by the borax to diminish acidity and increase the amphoteric and alkaline reactions. The per cent of samples strongly acid in the fore period is 22.9, in the preservative period 7.4, and none in the after period. The percentage of samples acid in the fore period is 54.1, in the preservative period 40.6, and in the after period 32.5. The percentage giving an amphoteric reaction in the fore period is 22.9, in the preservative period 52.9, and in the after period 60. There are no samples giving an alkaline reaction in the fore period, in the preservative period 2.8 per cent, and in the after period 7.5 per cent.

Series V.

During the fifth series boric acid was given to three members of the class, namely, Nos. 1, 2, and 3, and borax to three members, namely, 4, 5, and 6. The individual data are given for the reaction of the acid during this period, which extended over fifty days, also the general averages for Nos. 1, 2, and 3, who received boric acid, and for Nos. 4, 5, and 6, who received borax. In the averages of those who received boric acid we see a marked increase in the strong acidity under the influence of the preservative. The per cent of samples strongly acid in the fore period is 12.5, in the preservative period 63.3, and in the after period 51.3. In no case is there an alkaline reaction. The increased percentage showing a strong acid reaction was recruited from the samples showing an acid and an amphoteric reaction. The averages in the case of those receiving borax show a strong acid reaction in the fore period, when the percentage is 25, in the preservative period 30.4, and in the after period 49.4. There was no alkaline reaction observed in any case. No account has been taken in the above discussion of any possible effect upon the reaction which a change of concentration of the urine due to the season of the year may have produced.

We have here an apparent contradiction to the trend of the testimony in Series IV, in which the borax shows a tendency to produce diminished acidity. It must be remembered, however, that in the fifth series the quantity of boric acid given, or of borax equivalent thereto, was only one-half gram per day. It is possible that this small amount may have suffered decomposition and appeared in the urine as boric acid in both cases. There is no positive proof of this fact, however, save the indication in regard to acidity above mentioned.

General Average of Series II, III, IV, and V.

It will be of use now to gather into one expression the general data of all the series relating to the administration of boric acid on the one

hand and of borax on the other, in so far as the influence of these preservatives upon the action of the urine depends. These data show that the average percentage of the samples strongly acid during the fore periods of those series in which boric acid was taken was 13.9, during the preservative period 47.1, and during the after period 51.2. The percentage of samples returned as acid during the fore period is 66.1, during the preservative period 33.3, and during the after period 32.9. The number of samples returned as amphoteric in reaction during the fore period is 19.9, during the preservative period 19.5, and during the after period 15.9. In no case was an alkaline reaction reported. These data show that the increase in the strongly acid samples is generally at the expense of those marked acid. The data further show that the tendency to a strongly acid reaction is continued in these cases during the after period. (Table XXVII.)

Turning now to the data when borax was administered, we find that the average percentage marked strongly acid during the fore period is 25, during the preservative period 18.9, and during the after period 19.8. Of those marked acid, we find 54.2 per cent in the fore period, 56.9 per cent in the preservative period, and 40.5 per cent in the after period. The figures for amphoteric and alkaline reactions were respectively as follows: Fore period, 20.8 and none; preservative period, 23.2 and 0.9 per cent; and after period, 34.7 and 5 per cent. These data show a marked influence on the part of the borax to diminish the strong acidity and to increase, or rather create, the alkalinity. As has before been stated, this would indicate that at least a large part of the borax is excreted unchanged, whereas in the fifth series, where only a small quantity was given, the possibility of its decomposition and of its appearance as boric acid must be taken into consideration.

TABLE XXIII.—*Reaction of urine in Series II.*

[All members receiving boric acid.]

Member and period.	Number of samples—				Per cent of samples—			
	Strongly acid.	Acid.	Amphoteric.	Alkaline.	Strongly acid.	Acid.	Amphoteric.	Alkaline.
No. 7:								
Fore period	2	5	2	0	22.2	55.5	22.2	0.0
Preservative period	9	3	2	0	64.3	21.4	14.3	0.0
After period	1	2	2	0	20.0	40.0	40.0	0.0
No. 8:								
Fore period	0	5	4	0	0.0	55.5	44.4	....
Preservative period	3	7	3	1	21.4	50.0	21.4	7.1
After period	1	1	3	0	20.0	20.0	60.0	0.0
Supplementary period	0	2	3	0	0.0	40.0	60.0	0.0
No. 9:								
Fore period	2	5	2	0	22.2	55.5	22.2	0.0
Preservative period [a]	....	....	....	....	....	....	....	....
After period	0	3	2	0	0.0	60.0	40.0	0.0
Supplementary period	0	3	2	0	0.0	60.0	40.0	0.0
No. 10:								
Fore period	2	6	1	0	22.2	66.6	11.1	0.0
Preservative period	6	7	1	0	42.9	50.0	7.1	0.0
After period [b]	....	....	....	....	....	....	....	....
Supplementary period	0	4	1	0	0.0	80.0	20.0	0.0

[a] Sick. No sample and no preservative greater part of time. [b] Sick.

TABLE XXIII.—*Reaction of urine in Series II*—Continued.

[All members receiving boric acid.]

Member and period.	Number of samples—				Per cent of samples—			
	Strongly acid.	Acid.	Amphoteric.	Alkaline.	Strongly acid.	Acid.	Amphoteric.	Alkaline.
No. 11:								
Fore period	1	4	4	0	11.1	44.4	44.4	0.0
Preservative period [a]	6	4	4	0	42.8	28.5	28.5	0.0
After period	2	1	2	0	40.0	20.0	40.0	0.0
Supplementary period	0	3	2	0	0.0	60.0	40.0	0.0
No. 12:								
Fore period	2	5	2	0	22.2	55.5	22.2	0.0
Preservative period [b]	2	7	5	0	14.2	50.0	35.7	0.0
After period	1	1	2	1	20.0	20.0	40.0	20.0
Supplementary period	0	3	2	0	0.0	60.0	40.0	0.0
Average for Nos. 7 and 10:								
Fore period	....	....	....	....	22.2	61.1	16.7	0.0
Preservative period	....	....	....	....	53.6	35.7	10.7	0.0
After period	....	....	....	....	[c] 20.0	[c] 40.0	[c] 40.0	[c] 0.0
Average for Nos. 8, 9, 10, 11, and 12:								
Fore period	....	....	....	....	15.5	55.5	28.9	0.0
Preservative period	....	....	....	....	[d] 30.3	[d] 44.6	[d] 23.2	1.8
After period	....	....	....	....	[e] 20.0	[e] 30.0	[e] 45.0	5.0
Supplementary period	....	....	....	....	0.0	60.0	40.0	0.0

[a] Preservative not given throughout this period on account of sickness. Sample more strongly acid.
[b] Preservative not given throughout this period on account of sickness. Amphoteric occurs more frequently during this period.
[c] Average for No. 7 only.
[d] Average for Nos. 8, 10, 11, and 12.
[e] Average for Nos. 8, 9, 11, and 12.

TABLE XXIV.—*Reaction of urine in Series III.*

[All members receiving boric acid.]

Member and period.	Number of samples—				Per cent of samples—			
	Strongly acid.	Acid.	Amphoteric.	Alkaline.	Strongly acid.	Acid.	Amphoteric.	Alkaline.
No. 1:								
Fore period	1	7	1	0	11.1	77.7	11.1	0
Preservative period	10	2	0	0	83.3	16.7	0.0	0
After period	8	0	0	0	100.0	0.0	0.0	0
No. 2:								
Fore period	1	6	2	0	11.1	66.7	22.2	0
Preservative period	4	0	1	0	80.0	0.0	20.0	0
After period	13	2	0	0	86.7	13.3	0.0	0
No. 3:								
Fore period [a]	2	5	1	0	25.0	62.5	12.5	0
Preservative period	1	5	6	0	8.3	41.7	50.0	0
After period	5	1	2	0	62.5	12.5	25.0	0
No. 4:								
Fore period	1	4	3	0	12.5	50.0	37.5	0
Preservative period	0	8	4	0	0.0	66.7	33.3	0
After period [b]	1	5	1	0	14.3	71.4	14.3	0
No. 5:								
Fore period	0	4	5	0	0.0	44.4	55.5	0
Preservative period	1	3	8	0	8.3	25.0	66.6	0
After period	0	3	5	0	0.0	37.5	62.5	0
No. 6:								
Fore period	1	6	2	0	11.1	66.6	22.2	0
Preservative period	5	6	1	0	41.6	50.0	8.3	0
After period	6	2	0	0	75.0	25.0	0.0	0
Average:								
Fore period	....	....	....	....	11.9	61.3	26.8	0
Preservative period	....	....	....	....	36.9	33.4	29.7	0
After period	....	....	....	....	56.4	26.6	17.0	0

[a] Sample on 21st lost. [b] Sample on 16th lost.

TABLE XXV.—*Reaction of urine in Series IV.*

[All members receiving borax.]

Member and period.	Number of samples—				Per cent of samples—			
	Strongly acid.	Acid.	Amphoteric.	Alkaline.	Strongly acid.	Acid.	Amphoteric.	Alkaline.
No. 7:								
Fore period	2	5	1	0	25.0	62.5	12.5	0.0
Preservative period	0	2	3	0	0.0	40.0	60.0	0.0
After period [a]	....	....	....	....	....	....	....	....
No. 8:								
Fore period	1	5	2	0	12.5	62.5	25.0	0.0
Preservative period	0	9	8	1	0.0	50.0	44.4	5.5
After period	0	3	5	0	0.0	37.5	62.5	0.0
No. 9:								
Fore period	2	3	3	0	25.0	37.5	37.5	0.0
Preservative period	0	4	13	1	22.2	72.2	5.5	0.0
After period	0	3	4	1	0.0	37.5	50.0	12.5
No. 10:								
Fore period	3	5	0	0	37.5	62.5	0.0	0.0
Preservative period	0	13	5	0	0.0	72.2	27.7	0.0
After period	0	3	4	1	0.0	37.5	50.0	12.5
No. 11:								
Fore period	2	4	2	0	25.0	50.0	25.0	0.0
Preservative period	0	1	10	0	0.0	9.1	90.9	0.0
After period	0	3	5	0	0.0	37.5	62.5	0.0
No. 12:								
Fore period	1	4	3	0	12.5	50.0	37.5	0.0
Preservative period	0	0	8	1	0.0	0.0	88.8	11.1
After period	0	1	6	1	0.0	12.5	75.0	12.5
Average:								
Fore period	....	....	....	....	22.9	54.1	22.9	0.0
Preservative period	....	....	....	....	7.4	40.6	52.9	2.8
After period	....	....	....	....	0.0	32.5	60.0	7.5
Average for Nos. 8, 9, and 10:								
Fore period	....	....	....	....	25.0	54.1	20.8	0.0
Preservative period	....	....	....	....	7.4	64.8	25.9	1.8
After period	....	....	....	....	0.0	37.5	54.2	8.3

[a] Withdrawn.

TABLE XXVI.—*Reaction of urine in Series V.*

[Nos. 1, 2, and 3 receiving boric acid and Nos. 4, 5, and 6 receiving borax.]

Member and period.	Number of samples—				Per cent of samples—			
	Strongly acid.	Acid.	Amphoteric.	Alkaline.	Strongly acid.	Acid.	Amphoteric.	Alkaline.
No. 1:								
Fore period	1	7	0	0	12.5	87.5	0.0	0
Preservative period	40	10	0	0	80.0	20.0	0.0	0
After period	9	2	0	0	81.8	18.2	0.0	0
No. 2:								
Fore period	1	6	1	0	12.5	75.0	12.5	0
Preservative period	30	9	2	0	73.2	21.9	5.0	0
After period	11	4	3	0	61.1	22.2	16.7	0
No. 3:								
Fore period	1	6	1	0	12.5	75.0	12.5	0
Preservative period	18	26	5	0	[a] 36.7	53.1	10.2	0
After period	1	8	0	0	11.1	88.9	0.0	0
No. 4:								
Fore period	1	5	2	0	12.5	62.5	25.0	0
Preservative period	1	16	7	0	4.2	66.7	29.1	0
After period [b]	....	....	....	....	....	....	....	0
No. 5:								
Fore period	3	3	2	0	37.5	37.5	25.0	0
Preservative period	9	26	15	0	18.0	52.0	30.0	0
After period	2	6	1	0	22.2	66.7	11.1	0
No. 6:								
Fore period	2	5	1	0	25.0	62.5	12.5	0
Preservative period	29	12	1	0	69.0	28.6	2.4	0
After period	13	4	0	0	76.5	23.5	0.0	0
Average for Nos. 1, 2, and 3:								
Fore period	....	....	....	....	12.5	79.2	8.3	0
Preservative period	....	....	....	....	63.3	31.4	5.1	0
After period	....	....	....	....	51.3	43.1	5.6	0
Average for Nos. 4, 5, and 6:								
Fore period	....	....	....	....	25.0	54.2	20.8	0
Preservative period	....	....	....	....	30.4	49.1	20.5	0
After period [c]	....	....	....	....	49.4	45.1	5.6	0

[a] No sample on May 4. [b] No after period for No. 4; resigned. [c] Nos. 5 and 6 only in after period.

TABLE XXVII.—*General summary of reaction of urine in Series II, III, IV, and V.*

Periods.	Per cent of samples—			
	Strongly acid.	Acid.	Amphoteric.	Alkaline.
Boric acid (Series II and III, and Nos. 1, 2, and 3 of Series V):				
Fore period	13.9	66.1	19.9	0.0
Preservative period	47.1	33.3	19.5	.0
After period	51.2	32.9	15.9	.0
Borax (Nos. 8, 9, and 10, Series IV, and Nos. 4, 5, and 6, Series V):				
Fore period	25.0	54.2	20.8	.0
Preservative period	18.9	56.9	23.2	.9
After period	19.8	40.5	34.7	5.0

VOLUME, SPECIFIC GRAVITY, AND TOTAL SOLIDS.

In Tables XXX–XL are given the volume of urine, the specific gravity, and the grams of total solids for each day, for each individual belonging to the table, with totals and averages for each period of the series. Averages of these data by periods are also given, including those men who completed the series. A glance at the individual data shows a very limited variation from normal conditons in respect of specific gravity and solids eliminated.

The specific gravity of all the samples of urine was taken at 25° C., compared with water at 25° C., as this is about the average laboratory temperature for the year. At first the determinations were made with the static balance and corrected to 25° C., but later the Westphal balance was found more convenient, the results agreeing, within one or two units in the third place, with those secured by means of a piknometer.

The factor of Neubauer,[a] 0.233, which is designed for specific gravity at 15° referred to water at 0°, and that of Long, 0.260,[b] for specific gravity at 25° referred to water at 4°, would therefore not answer for calculation of the solids from the specific gravity of urine at 25° compared with water at 25°, as determined above.

The method of determining the factor was based on the same principle as that of Neubauer and Long, which consists of evaporating a measured quantity of urine, the specific gravity being obtained exactly by means of a piknometer, in a closed tube. The products are aspirated through decinormal sulphuric acid, the excess of acid titrated with approximately twentieth normal sodium hydroxid (cochineal being used as indicator), the ammonia so obtained calculated to urea, and this amount added to the solids obtained by direct weighing. The factor is obtained by dividing the total solids by the last three figures of the specific gravity.

The error in this method, due to the amount of ammonia from the ammonium salts present, is about offset by the ammonia obtained from the breaking down of organic compounds, so that the results, while not strictly correct, are about as close as can be obtained.

[a] Zeit. anal. Chem. 1: 166. [b] J. Chem. Soc. 25: 257.

The apparatus in which these determinations were made consists of a tin box through which tubes of hard glass are passed. The box is filled with sand and kept at a temperature of 95° to 100°, the inside temperature of the tubes being from 90° to 95°. The air is first led through concentrated sulphuric acid, then through a tube of soda lime and calcium chlorid, and finally preheated by passing through hard glass tubes heated by means of a Bunsen burner. Small glass boats which readily hold 5 cc of urine are employed for the drying. The solid residue is obtained in about two and one-half to three hours and kept in a desiccator for three hours before weighing. The determinations agreed closely throughout, particularly in the case of individuals, and an average of a number of determinations gave the figure 0.245, which was adopted and used in the calculation of the solids throughout the work. In the application of this factor the last three figures of the specific gravity are multiplied by 0.245 which gives the amount of total solids in one thousand parts of the sample. The calculation is then made for the given volume. In making these calculations a "slide rule" was used, and therefore the results are not exactly accurate in the third decimal place.

SERIES I.

In the fore period of Series I the highest average specific gravity for any one person is found in the case of No. 1, namely, 1.0282, and this corresponds with next to the largest quantity of total solids eliminated, namely, 61.563 grams. In the case of No. 2, while the specific gravity is somewhat lower, the average quantity of urine excreted is higher, and the total solid matter, 63.721 grams, excreted daily, is somewhat higher than in the case of No. 1. The most notable departure in specific gravity from the average is found in the cases of Nos. 4 and 5, where the density of the urine is considerably lower than in the other cases. This, however, is partly at least accounted for by the greater volume of urine voided by these two subjects. The average specific gravity of the fore period for the six men is 1.0251, and the average quantity of total solids eliminated per day is 57.431 grams.

As would naturally be supposed in cases of health and a normal exercise of the functions of the kidneys, the density of the urine would be inversely as the quantity. The total solid matter excreted in the urine would also depend largely on the degree of metabolic activity as conditioned by exercise, quantity of food, and external temperature. The greater the amount of exercise the more tissue broken down, and hence the greater tendency to excrete solid matter in the urine. The lower the temperature, on the other hand, the greater the tendency to increase the volume of urine, thus diminishing its specific gravity, but not necessarily altering the quantity of solid matter voided.

The quantity of solid matter voided in the urine may also be compared with the weights of the individuals. In Series I, fore period, the heaviest man is No. 2, his average weight for the fore period being 71.89 kilograms (Table XIII, p. 105). It will be seen that No. 2 excretes the largest quantity of solids, corresponding to heaviest weight. The next in weight is No. 1, and he excretes the second largest quantity of total solids. Next in order of weight is No. 6, but No. 6 excretes the smallest quantity of solids of any in the class. No. 4 is fourth in weight and third in the amount of solid matter excreted. No. 3 is fifth in weight and fourth in the quantity of solid matter excreted. No. 5 is sixth in weight and fifth in the quantity of solid matter excreted. Thus it is seen that with the exception of No. 6 the quantity of solid matter excreted in the urine during the fore period by these subjects is proportional to their weight.

In the first preservative subperiod (December 22–26) a marked increase is noticed in the solid matter excreted. This is partly due, though not entirely, to the fact that the boric acid administered is excreted chiefly by the urine. Inasmuch, however, as this could not have added more than 1 gram per day to the quantity of solid matter excreted, it does not account for the total increase, with the possible exception of the case of No. 2. In other words, the administration of the boric acid seems to have a marked effect at first in increasing the quantity of solids in the urine other than the additional weight given by its presence. During this period No. 4 excretes the largest quantity of solid matter per day, and No. 1 the next largest. No. 6 again occupies the last place. During the second subperiod (December 27–30) the stimulating effect of the preservative seems to have been expended, and the quantities of solid matter were reduced almost to those found in the fore period. No. 1 leads the list during this period, and No. 6 is again at the foot. During the third subperiod (December 31 to January 3) there is a continued marked depression in the quantity of solid matter excreted. No. 1 holds again the first place, and No. 6 the last.

The depressing effect of the added preservative upon the amount of solids excreted continues during the after period, though not uniformly in all cases. Nos. 1, 4, and 5 diminish the excreta during the after period, as compared with the preservative period, and Nos. 2, 3, and 6 increase the amount. The total variation, however, is of a negative quantity, the total amount excreted during the after period being 56.238 grams daily as compared with 56.973 grams daily during the preceding subperiod. The data recorded as a whole appear to indicate that the first result of the administration of a preservative is to increase the total solids eliminated in the urine and afterwards to diminish them. The effect upon the specific gravity, assuming a reasonable constancy of volume, follows the amount of total solids in

solution. Thus the highest specific gravity is that of the fore period, although the largest amount of total solids is not eliminated during this period, and the lowest specific gravity is that of the last preservative subperiod, corresponding to next to the lowest quantity of total solids eliminated. As indicated by the above data, the conclusion is evident that the administration of the preservative produces a considerable disturbance in the total quantity of solids eliminated in the urine, and, consequently, in the specific gravity thereof. In the above discussion only the direct relation of specific gravity to total solids is considered. Attention should be called to the fact, however, that the total solids are calculated from the specific gravity and volume of the urine. When both these factors are considered, therefore, the true relation of total solids to specific gravity becomes evident.

Series II.

Comparing the individuals of this series in regard to the volume of urine voided, we note that during the fore period the largest quantity is found in the case of No. 8, namely, a daily average of 1,426 cc, and the smallest is found in the case of No. 7, namely, 998 cc. No. 7 was ill and absent from the table from the 14th of February, but the urine was collected until the end of period. The average for the three preservative subperiods (January 28 to February 10) shows the largest daily amount of urine in the case of No. 10, namely, 1,418 cc, and the smallest in the case of No. 7, namely, 972 cc. No. 10, however, was ill and no sample of urine was saved after February 11. During this period marked irregularities in the measurement of the urine were caused by sickness in the case of No. 9, who received no preservative after January 31, and to a similar extent in the case of No. 8 and No. 11. These men received no preservative after the second preservative subperiod. These disturbances, especially in the case of Nos. 8 and 11, manifest a notable decrease of the amount secreted, due to the febrile conditions which exist.

In the after period the largest amount of urine voided is found in the case of No. 11, namely, 1,242 cc, and the smallest in the case of No. 12, namely, 820 cc. No. 12 received no preservative after the beginning of the third preservative subperiod.

These individual data disclose a slight tendency, apparently due to the administration of the preservative, to decrease the volume of urine secreted.

The general condition of the members of the class at the end of the preservative period is quite unfavorable and this is due largely to colds and other troubles not connected in any way with the administration of the preservative; this unfavorable condition continues during the short after period.

The inception of any disease or sickness not directly traceable to the

administration of the preservative introduces into the observations an element of uncertainty which must be taken into full consideration in drawing conclusions from the data obtained. In the present case at least three members of the table are affected to such an extent by extraneous diseases as to render the data obtained in their cases of small value. It does not seem advisable, however, in a discussion of this kind, to omit any of the recorded data which can throw any light whatever, either directly or by suggestion, upon the problem under consideration. Allowing full weight, therefore, to these disturbing influences, we still have certain modifications of the urine which it seems only fair to attribute in part to the effect of the preservative administered. In the case of Nos. 7 and 10, a more complete comparison can be made, since these men received the same quantity of preservative extending over the same periods of time.

The mean volume of urine secreted by Nos. 7 and 10 during the fore period is 1,101 cc, and during the preservative period 1,196 cc. This shows that the administration of the preservative did not tend notably to increase the volume of the urine. The mean specific gravity of the urine in the case of Nos. 7 and 10 during the fore period is 1.0258, and during the preservative period 1.0235. This shows a slight decrease in the specific gravity, more than would be accounted for by the slightly increased volume. The mean daily quantity of total solids excreted in the case of Nos. 7 and 10 during the fore period is 66.847 grams, and during the preservative period 66.874 grams, showing only a very slight increase.

SUPPLEMENTARY PRESERVATIVE PERIOD.

For the purpose of determining what effect, if any, a daily progressive increase in the quantity of preservative would have, the members of the table in this series, with the exception of Nos. 7 and 10, were placed upon a special period extending from February 16 to February 21, inclusive. In this period the quantity of preservative given the first day was 1 gram, and this was increased by 1 gram daily until the 20th; on the 20th and 21st 5 grams a day were given. In the case of Nos. 8, 11, and 12 the quantities of urine voided during this period were very high, while with No. 9 the quantity was about normal. With the increased quantities there was a marked decrease in specific gravity, the average specific gravity falling in the case of No. 11 to 1.0166. The highest specific gravity is found in the case of No. 9, namely, 1.0231. The quantity of solids excreted showed an increase with the increasing quantity of preservative in the case of No. 8, with the exception of the last day, when there was a decrease. In the case of No. 9 the quantity of solids decreased, but not regularly. In the case of No. 11 there seemed to be no marked relation between increasing preservative and amount of solids excreted. In the case of No. 12

there was an apparent decrease, but this practically was accounted for by the very great volume of urine secreted on the first day.

In general it appears that a larger quantity of solids was excreted during this period than normally. The quantity of common salt excreted of course is not significant unless compared with the quantity administered. It is largest in the case of No. 12, amounting to a mean of 17.408 grams per day. It is smallest in the case of No. 11, where the average quantity per day is 8.730 grams.

In general it may be said that the data are not decisive in respect of any influences of the increasing amount of preservative on the character of the excretion, with the possible exception of showing a tendency to increased volume with corresponding decreased specific gravity. On the whole, however, the quantity of solids excreted appears to be larger than normal.

Series III.

The average daily volume of the urine of No. 1 during the fore period is 931 cc, the average specific gravity, 1.0287; the average daily amount of total solids, 65.124 grams, and the average daily amount of common salt excreted in the urine, 11.133 grams. (See Table XXXV, p. 185.) There is a slight diminution in the volume of the urine during the first preservative subperiod and an increase in its volume during the second and third subperiods, the mean volume for the three subperiods being very little more than that for the fore period. There is a marked increase in volume in the after period.

These data show that in the case of No. 1 the preservative has no tendency whatever to produce diuresis, but is inclined to produce the opposite results. The specific gravity rises a little during the first preservative subperiod, but lowers during the second and third subperiods, the average for the three subperiods showing a diminished specific gravity as compared with the fore period. There is a marked decrease in the specific gravity during the after period, caused to some extent, but not entirely, by the increased volume. The total solids eliminated are also decreased during the preservative period, although practically all of the preservative given is eliminated by the urine. This tendency to decrease is also continued during the after period, indicating a persistence on the part of the preservative to interfere with those metabolic processes which result in the supply of solid matter to the urine. In regard to common salt, it may be said that the amount administered is assumed to be practically constant throughout the period of observation. The effect of the preservative is noticed in the diminished excretion of common salt, and this tendency to diminish excretion is continued throughout the after period.

In the case of No. 2 there is a slight decrease in the volume of urine during the administration of the preservative, and this decrease

still persists, though with a tendency toward the restoration of the normal state, during the after period. The specific gravity of the urine does not vary greatly except in one instance, namely, the second preservative subperiod, when it is somewhat high. There is an inclination in this case also toward a decrease in the total solids eliminated by the urine during the period of administration of boric acid, and indication of a return to normal conditions is manifest during the after period. Again, the common salt excretion is diminished during the administration of the preservative, and this diminution continues into the after period, though with a tendency to return to the normal state.

With No. 3 there is a slight increase in the volume of urine produced during the administration of the preservative and a marked decrease during the after period. The specific gravity remains fairly constant, save for a small drop, during the second subperiod. The total quantity of solids exuded in the urine is diminished during the administration of the preservative, and this diminution continues with increased rapidity during the after period. The amount of common salt excreted appears to decrease during the preservative period, and this diminution increases in a marked degree in the after period.

With No. 4 there is a marked increase in the volume of urine during the preservative period and a noticeable decrease during the after period. There appears to be a marked depression in the specific gravity during the second and third preservative subperiods, the number falling to an abnormally low figure, and there is a general decrease of specific gravity during the entire preservative period, due, probably in a large measure, to the increased volume of urine excreted. There is an increase in the specific gravity during the after period, due to diminished volume. A marked increase is shown in the total quantity of solids in the urine during the first preservative subperiod, while the total average quantity for the three subperiods is very nearly the same as that for the fore period. There is a remarkable decrease, however, in the total solids excreted during the after period. The average quantity of salt excreted during the preservative period is almost the same as in the fore period, but the amount in the after period is very much less.

In the case of No. 5 there is little change in the volume of urine during the preservative period, and it is slightly diminished during the after period. The specific gravity remains quite constant throughout the whole series of observations. The total solids excreted show a constantly diminishing tendency, with the exception of the second preservative subperiod, where the quantity excreted is slightly greater than in the preceding subperiod. This diminution in the quantity of total solids excreted continues in a marked degree during the after period. Common salt eliminated also diminishes during the preserva-

tive period to a quite notable extent, and this diminution continues in the after period.

In the case of No. 6 there is a slight increase in the volume of the urine during the preservative period, and a decrease during the after period. The total solids excreted remain quite constant throughout all the periods. The quantity of salt excreted is diminished during the preservative period, with a slight tendency during the after period to return to the normal of the fore period.

It is interesting to compare now the data of Nos. 1, 3, 4, and 5, the only complete data for the whole series which are not burdened with complications due to illness and other accidents which render their comparative use inadvisable.

Summarizing the data for these four subjects we find the following results:

The average daily quantity of urine during the fore period is 1,018 cc, during the preservative period 1,064 cc, and during the after period 908 cc. These data show a very slight influence on the part of the preservative to increase the volume of the urine. In regard to the specific gravity, we find that of the fore period to be 1.0266, of the preservative period 1.0251, and of the after period 1.0256. These data show a very slight tendency on the part of the preservative to diminish the specific gravity of the urine, partly due at least to its increased volume. In regard to the quantity of total solids excreted, we note that in the fore period it is 65.533 grams, during the preservative period 62.990 grams, and during the after period 54.564 grams. There appears to be a marked tendency here on the part of the preservative to diminish the total quantity of solids excreted in the urine, and this tendency persists in a noticeable degree during the after period. In regard to the amount of common salt excreted, we find that it is 12.452 grams in the fore period, 10.279 grams in the preservative period, and 7.957 grams in the after period. We note here a tendency to decrease the excretion of common salt during the administration of the preservative, and that this tendency continues to a great extent during the after period.

In general, it may be said from the results of these observations, so far as the third series is concerned, that boric acid has but little, if any, effect in increasing the volume of the urine. It has an effect, apparently, toward decreasing the specific gravity of the urine. It has a marked effect in decreasing the amount of solid matters excreted, and also the amount of common salt, which forms a considerable part of the total excretion of solid matter from the kidneys. We note also that these depressing effects which have been mentioned persist to a greater or less extent during the after period.

Judged by these data as a whole, the conclusion seems logical that the general tendency of the preservative is to diminish or impair those metabolic processes which furnish the solid matters excreted in the

urine, and that this impairment persists for a considerable time after the cessation of the administration.

SERIES IV.

The only complete comparisons in this series are of Nos. 8, 9, and 10. By reason of a disturbance on account of illness and other causes, Nos. 7, 11, and 12 are made subjects of partial or fragmentary comparison.

In the case of No. 8 it is seen that the volume of urine in the fore period is 995 cc daily, during the preservative period 958 cc, and during the after period 901 cc. There is thus a progressive decrease in the quantity of urine. This can not, however, be attributed to the preservative, because during the progress of this observation the season advanced from early spring, March 20, to late spring, April 22. The decrease, therefore, in this case in the volume of the urine is rather to be ascribed to the progressive increase in temperature than to the effect of the preservative.

In the case of No. 9 the volume of the urine during the fore period is 1,238 cc, during the preservative period 1,343 cc, and during the after period 1,374 cc daily. Here we have a slight increase in the volume of the urine, which seems to depend either upon the action of the preservative or upon the relative quantities of water consumed.

In the case of No. 10 the volume of urine during the fore period is 971 cc daily, during the preservative period 995 cc, and during the after period 864 cc. In this instance there is a very slight increase in the volume of the urine during the preservative period and a considerable decrease in the volume during the after period.

In regard to the specific gravity of the urine, it is seen in the case of No. 8 that there is little change throughout the period.

In the case of No. 9 the urine is decidedly lighter than in the case of No. 8, due doubtless to a larger volume. During the preservative period, in which the volume is considerably increased, the specific gravity is correspondingly lowered, and this dilution continues also during the after period.

With No. 10 the specific gravity is high, as compared with No. 9 and even with No. 8. There is a decided decrease in specific gravity during the preservative period, and this dilution of the urine is continued during the after period.

In regard to the quantity of total solids eliminated, we find a considerable decrease in the case of No. 8 in the preservative period, the average daily quantity falling from 59.57 grams to 56.20 grams. This decrease in total solids continues also during the after period, the average daily quantity exuded during this period being 51.92 grams. In this case the general effect of the preservative seems to have been to

diminish the amount of total solids eliminated by the urine in spite of the fact that the greater part of the boric acid exhibited passed out of the body through the kidneys. This inhibiting effect, as seen, continues during the after period, as might have been expected by reason of the fact that it required practically all of the after period to eliminate the last traces of boric acid from the body.

In No. 9's case the opposite effect is noticed, the amount of total solids eliminated rising from 61.16 as the daily average of the fore period to 63.67 as the daily average of the preservative period. There is a loss, however, during the after period in this case, the quantity of total solids eliminated falling to 60.72 grams per day.

The data for No. 10 show that the quantity of total solids eliminated during the fore period is 62.55 grams daily, during the preservative period 58.82 grams, and during the after period 50.98 grams. In this case, as with No. 8, there is a progressive decrease in the quantity of total solids excreted, including the after period.

As regards the common salt, in the case of No. 8 the quantity eliminated daily during the fore period is 7.52 grams, during the preservaive period 6.59 grams, and during the after period 4.83 grams, showing a progressive diminution.

The quantity of common salt eliminated by No. 9 during the fore period is 6.44 grams, during the preservative period 7.42 grams, and during the after period 7.19 grams. In this instance we see an increase in the common salt eliminated during the preservative period, with a tendency during the after period to restore the excretion to the rate of the fore period.

No. 10 during the fore period eliminates daily 7.65 grams of common salt, during the preservative period 7.22 grams, and during the after period 6.48 grams. Therefore, in the case of No. 10 the data obtained agree with those of No. 8, while in the case of No. 9 the results do not agree with those of Nos. 8 and 10.

A partial comparison may be made of Nos. 11 and 12, but by reason of illness the administration of the preservative is of an irregular character, and hence the data are not strictly comparable.

In No. 11's case a disturbance of the bodily functions not due to the administration of the preservative occurred immediately after the regular fore period of Series IV. Therefore No. 11 received special treatment. His fore period begins March 31, the preservative period April 4, and the after period April 15. Comparing the fore period with the preservative period we find a marked increase in volume of urine, while the specific gravity is slightly decreased. The total solids, however, rise from 35.41 grams daily to 52.64 grams, and the common salt rises from 2.18 grams daily to 5.13 grams. In the after period of No. 11 the specific gravity is still very low, namely, 1.020. There is

also an additional slight diminution in the quantity of total solids eliminated, while the quantity of common salt separated remains practically the same as in the preservative period.

In cases of incipient illness there was often noted a marked decrease of salt in the urine. The data of No. 11 show this phenomenon in a notable degree. The quantity of salt excreted on April 1 in this case is only a little over 1 gram and the mean quantity from March 31 to April 3, inclusive, is a little over 2 grams daily.

The case of No. 12 is similar to that of No. 11; the fore period begins April 3, the preservative period April 6, and the after period April 15. There is here, also, a low specific gravity of the urine, being practically the same, however, for all periods, showing a remarkable constancy of composition in so far as specific gravity is concerned. There was, however, a decrease in volume in the preservative period and a continued decrease in the after period. Of the total solids eliminated, we find in the fore period 57.53 grams daily, in the preservative period 62.83 grams, while in the after period the amount falls to 51.36 grams daily. Of common salt, the quantity eliminated during the fore period is 11.50 grams daily, during the preservative period 11.34 grams, and during the after period 8.66 grams. The quantities of common salt eliminated by this subject, it is seen, are very much larger than those thrown off by any other of the members of the class, but the records show he also consumed a greater quantity.

In the case of No. 7 the data are complete only for the preliminary period and the first preservative subperiod. At the end of this period No. 7, by reason of removal from the city, withdrew from the table. The volume of the urine during the fore period in the case of No. 7 is 667 cc and during the first preservative subperiod 685 cc daily. The specific gravity during the fore period is slightly lower than during the first preservative subperiod. The total solids eliminated are considerably greater in the first subperiod than during the preliminary period, and the same is true of the quantity of common salt eliminated.

Bringing together the data in the cases of Nos. 8, 9, and 10, we find the total volume of urine for the fore period to be 1,065 cc, for the preservative period 1,099 cc, and for the after period 1,046 cc daily. There seems, in this instance, to be a slight tendency on the part of the preservative to increase the volume of the urine, but this increase is extremely minute. As regards the specific gravity, it is found to be 1.0244 during the fore period, 1.0232 as the average of the preservative period, and 1.0225 during the after period. There seems to be a tendency manifested here on the part of the preservative to gradually lower the specific gravity of the urine. This effect, however, is not very well marked. In regard to the total solids eliminated, we find that during the fore period the amount is 61.095 grams, during

the preservative period, 59.579 grams, and during the after period, 54.541 grams daily. There appears in this instance to be a decided tendency on the part of the preservatives to diminish the quantity of total solids eliminated by the kidneys, and this diminution, as might well be expected, continues during the after period.

Generally it may be said that in the case of Series IV the administration of the preservative had scarcely any appreciable effect in changing the volume of the urine, and the slight changes noted may well have been due to changes in the amount of liquid ingested rather than to the preservative itself. On the other hand it is seen that in regard to the quantity of total solids eliminated the general effect of the preservative is restrictive. The influence of the preservative upon the quantity of salt eliminated is not marked, and a comparison of the data would be incomplete without an accurate statement respecting the quantity consumed in the food.

Series V.

The data for this series are incomplete by reason of the withdrawal of No. 4 and the illness of Nos. 2 and 6. A comparison is best made, therefore, of the three who completed the period, in so far as the collection and examination of the urine is concerned. The data are given in Table XXXIX (p. 192).

The average quantity of urine voided by No. 1 during the fore period is 842 cc, containing an average of 60.83 grams of total solids, of which 6.89 grams are common salt. The average quantity of urine voided by No. 1 during the whole preservative period, extending from May 2 to June 20, inclusive, is 804 cc, containing 60.02 grams of solids, of which 7.62 grams are common salt. In the after period the average quantity of urine voided is 789 cc, containing 59.64 grams of total solids, of which 7.73 grams are common salt.

The data for No. 2 are not discussed, as no preservative was given him after June 11, on account of illness.

In the case of No. 3 the average volume of urine excreted in the fore period is 785 cc, containing 50.56 grams of total solids, of which 6.23 grams are common salt. During the preservative period the average volume of urine excreted by No. 3 is 834 cc, containing 52.42 grams of total solids, of which 6.64 grams are common salt. During the after period the average volume of urine secreted by No. 3 is 893 cc, containing 56.55 grams of total solids, of which 7.21 grams are common salt.

No complete data were obtained for No. 4, who withdrew from the table on May 25 and left the city.

In the case of No. 5 the average volume of urine secreted during the fore period is 869 cc, containing 64.16 grams of total solids, of which 5.49 grams are common salt. During the preservative period

the average quantity of urine excreted is 854 cc, containing 62.78 grams of total solids, of which 7.65 grams are common salt. During the after period the average volume of urine excreted is 854 cc., containing 60.21 grams of total solids, of which 7.66 grams are common salt.

No preservative was administered to No. 6 after June 11 on account of illness.

In this series of experiments No. 5 received borax and Nos. 1 and 3 boric acid. Combining the three expressions into one, we find that the average daily volume of urine excreted during the fore period by Nos. 1, 3, and 5 is 832 cc, containing 58.52 grams of total solids, of which 6.2 grams are common salt. During the preservative period the average quantity of urine excreted is 831 cc, containing 58.41 grams of total solids, of which 7.3 grams are common salt. During the after period the total amount of urine excreted is 845 cc, containing 58.8 grams of total solids, of which 7.53 grams are common salt.

It appears from the above general averages that the administration of the small quantities of the preservative during this long period had scarcely any influence whatever upon the composition of the urine. The volume remained reasonably constant during the entire time, the percentage of total solids was almost invariable, and there were but slight changes in the amount of common salt eliminated. Apparently the preservative had a slight effect in increasing the amount of common salt excreted, since only 6.2 grams were obtained in the fore period, while about 1 gram more was secured during the preservative period, and about 1.3 grams more during the after period. It is evident, however, from the above data that the administration of the small quantities of the preservative as practiced did not tend either to increase the volume of urine or in any notable way to change its constitution.

In regard to the smaller volume of urine during the fifth series, it must be borne in mind that the temperature—in other words, the season of the year—has a marked influence on excretion. With one or two exceptions, the same men were represented in the three series, I, III, and V. In Series I and Series III, however, the observations were conducted during the winter, while in Series V they were made during the spring, with increasing warm weather. The total volume of urine secreted, as is seen, is much larger during the winter months than during the summer months, by reason of the fact that a much larger proportion of the water in the body passes off through the pores of the skin during the warm weather. This difference is more strikingly brought out by a direct comparison of the average amount secreted by Nos. 1, 2, 3, and 6, who completed Series I, III, and V.

TABLE XXVIII.—*Effect of temperature upon volume of urine*

Series.	Date.		Average daily volume of urine per man.
	Beginning.	Ending.	
			cc.
I	Dec. 16, 1902	Jan. 13, 1903	929
III	Feb. 19, 1903	Mar. 19, 1903	860
V	Apr. 24, 1903	June 29, 1903	780

To determine the general effect of the preservative upon the volume of urine eliminated it will be necessary to combine, as in the other cases, the data for the different series, which is done in the following tabular statement, omitting Series II.

TABLE XXIX.—*Influence of the preservative on volume of urine secreted.*

Periods and series.	Number of days.	Number of men.	Average daily volume of urine per man.
Fore periods:			*cc.*
Series I	6	6	946
III	9	4	1,818
IV	8	3	1,065
V	8	3	832
Average[a]			969
Preservative periods:			
Series I	13	6	1,046
III	12	4	1,064
IV	18	3	1,099
V	50	3	831
Average[a]			960
After periods:			
Series I	10	6	986
III	8	4	908
IV	8	3	1,046
V	9	3	845
Average[a]			952

[a] To secure the average the number of days in each period is multiplied by the number of men in the series, and the volume is multiplied by the factor thus obtained. The resulting products are then added and finally their sum is divided by the sum of the factors.

A study of the averages of the above data shows that, compared with the fore period, there is practically no difference in the volume of urine secreted during the administration of the preservative. The data do not warrant any definite conclusion except of a negative nature, with a possible exception of suggesting that there may be a very slight impairment of the ability of the kidneys to secrete the urine by reason of the administration of borax and boric acid. This conclusion, however, is only tentative, and the data on which it is based do not warrant any more pronounced interpretation.

TABLE XXX.—*Urine determinations for Series I.*

Period and date.	No. 1.			No. 2.			No. 3.			No. 4.			No. 5.			No. 6.		
	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245.)	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).
Fore period.	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*
1902—Dec. 16	960	1.0273	64.205	860	1.0263	55.418	1,180	1.0193	55.800	1,040	1.0223	56.828	980	1.0203	48.745	720	1.0273	48.155
17	820	1.0293	58.868	940	1.0243	55.964	730	1.0243	43.465	1,160	1.0213	60.532	1,130	1.0183	50.670	770	1.0273	51.500
18	840	1.0293	60.302	1,050	1.0273	70.223	910	1.0243	54.182	1,240	1.0203	61.682	970	1.0233	55.375	770	1.0283	53.390
19	880	1.0291	62.742	1,040	1.0283	72.118	1,090	1.0267	71.308	1,090	1.0225	60.094	920	1.0251	56.580	760	1.0295	54.930
20 21	1,950	1.0258	123.259	1,810	1.0290	128.600	1,780	1.0265	115.570	2,160	1.0220	116.425	2,230	1.0210	114.752	1,260	1.0278	85.818
Total	5,450	....	369.376	5,700	....	382.323	5,690	....	340.325	6,690	....	355.561	6,230	....	326.122	4,280	....	293.793
Average	908	1.0282	61.563	950	1.0270	63.721	948	1.0242	56.721	1,115	1.0217	59.260	1,038	1.0216	54.354	713	1.0280	48.966
Preservative period.																		
First subperiod:																		
1902—Dec. 22	1,000	1.0285	69.820	930	1.0301	68.610	990	1.0253	61.370	1,100	1.0241	64.948	910	1.0250	55.742	730	1.0289	51.694
23	880	1.0277	59.723	1,050	1.0255	65.608	820	1.0233	46.814	1,400	1.0201	68.953	1,090	1.0237	63.287	780	1.0274	52.360
24	1,270	1.0230	71.564	1,170	1.0253	72.525	1,190	1.0233	67.940	1,730	1.0157	66.550	1,420	1.0164	57.058	800	1.0273	53.304
25	1,380	1.0201	67.970	850	1.0278	57.892	1,400	1.0191	65.508	1,310	1.0225	72.224	1,100	1.0201	54.178	690	1.0273	46.150
26	910	1.0265	59.082	820	1.0291	58.464	900	1.0253	55.791	1,200	1.0210	61.754	1,100	1.0214	57.678	800	1.0278	54.496
Total	5,440	....	328.159	4,820	....	323.099	5,300	....	297.423	6,740	....	334.429	5,620	....	287.943	3,800	....	258.004
Average	1,088	1.0252	65.632	964	1.0276	64.620	1,060	1.0233	59.485	1,348	1.0207	66.886	1,124	1.0213	57.589	760	1.0277	51.601
Second subperiod:																		
1902—Dec. 27	1,100	1.0278	74.991	920	1.0273	61.530	780	1.0273	52.170	1,310	1.0184	59.058	1,260	1.0180	55.680	570	1.0272	37.985
28	930	1.0262	59.688	1,100	1.0211	56.870	920	1.0242	54.544	1,340	1.0188	61.722	1,520	1.0150	55.858	1,000	1.0257	62.968
29	1,030	1.0257	64.850	1,170	1.0209	59.920	900	1.0241	53.136	1,200	1.0203	59.690	1,400	1.0204	69.980	780	1.0261	49.880
30	980	1.0267	64.100	1,120	1.0239	65.590	840	1.0258	53.100	1,040	1.0227	57.848	920	1.0244	55.000	770	1.0262	49.424
Total	4,040	....	263.629	4,310	....	243.910	3,440	....	212.950	4,890	....	238.318	5,100	....	236.518	3,120	....	200.257
Average	1,010	1.0266	65.907	1,078	1.0233	60.977	860	1.0254	53.238	1,222	1.0200	59.579	1,275	1.0194	59.129	780	1.0263	50.064

Third subperiod:																		
1902—Dec. 31	850	1.0265	55.190	1,140	1.0254	70.942	1,180	1.0214	61.870	1,610	1.0177	69.828	1,340	1.0216	70.920	920	1.0254	57.250
1903—Jan. 1	1,020	1.0269	67.218	880	1.0233	50.240	1,300	1.0228	72.622	1,310	1.0153	49.112	900	1.0233	51.381	820	1.0246	49.420
2	1,060	1.0245	63.370	1,340	1.0213	69.920	760	1.0261	48.600	970	1.0228	54.184	1,220	1.0191	57.084	840	1.0241	49.595
3	1,240	1.0229	69.564	940	1.0219	50.442	660	1.0270	43.660	930	1.0203	46.260	1,210	1.0197	58.407	530	1.0233	30.258
Total	4,170	....	255.342	4,300	....	241.544	3,900	....	226.752	4,820	....	219.384	4,670	....	237.792	3,110	....	186.523
Average	1,042	1.0252	63.835	1,075	1.0230	60.386	975	1.0243	56.688	1,205	1.0190	54.846	1,168	1.0209	59.448	778	1.0244	46.632
Entire preservative period:																		
Average	1,047	1.0257	65.125	1,039	1.0246	61.994	965	1.0243	56.470	1,259	1.0199	60.437	1,189	1.0206	58.722	773	1.0261	49.432
After period.																		
1903—Jan. 4	960	1.0256	60.210	870	1.0262	55.844	720	1.0254	44.805	880	1.0199	42.910	1,160	1.0199	56.566	1,080	1.0264	69.864
5	1,040	1.0255	64.982	840	1.0254	52.273	800	1.0264	51.744	890	1.0210	45.800	1,120	1.0199	54.614	660	1.0284	45.941
6	1,020	1.0262	65.450	1,080	1.0243	64.302	1,030	1.0233	58.800	1,020	1.0191	47.725	1,180	1.0201	58.177	760	1.0269	50.080
7	940	1.0265	61.028	940	1.0285	65.640	1,140	1.0224	62.564	1,420	1.0154	53.580	1,150	1.0201	56.640	920	1.0271	61.080
8	1,070	1.0265	69.468	870	1.0273	58.190	1,040	1.0215	54.780	1,120	1.0185	50.770	1,040	1.0214	54.538	600	1.0276	40.572
9	980	1.0261	62.670	980	1.0255	61.232	1,140	1.0209	58.370	950	1.0201	46.785	960	1.0235	55.278	910	1.0253	56.410
10	1,080	1.0266	70.380	1,100	1.0241	64.943	1,120	1.0201	55.160	1,020	1.0185	46.235	1,050	1.0231	59.430	620	1.0277	42.078
11	880	1.0265	57.140	1,040	1.0241	61.405	1,020	1.0234	58.474	890	1.0203	44.269	940	1.0241	55.500	840	1.0271	55.770
12	1,140	1.0271	75.684	1,070	1.0213	55.833	1,130	1.0228	63.122	1,370	1.0173	58.077	830	1.0261	53.078	550	1.0278	37.465
13	640	1.0276	43.275	1,560	1.0213	81.402	1,160	1.0221	62.818	1,020	1.0193	48.225	1,080	1.0240	63.503	620	1.0272	41.318
Total	9,850	....	630.287	10,350	....	621.064	10,300	....	570.637	10,580	....	484.376	10,510	....	567.324	7,560	....	500.581
Average	985	1.0264	63.029	1,035	1.0248	62.106	1,030	1.0228	57.064	1,058	1.0189	48.438	1,051	1.0222	56.732	756	1.0272	50.058

TABLE XXXI.—*Summary of urine determinations for Series I for six men.*

[Averages per man per day.]

Period.	Volume.	Specific gravity.	Total solids.
	cc.		*Grams.*
Fore period	946	1.0251	57.431
Preservative period:			
First subperiod	1,057	1.0243	60.969
Second subperiod	1,038	1.0235	58.149
Third subperiod	1,040	1.0228	56.973
Average for entire preservative period	1,046	1.0236	58.872
After period	986	1.0237	56.238

TABLE XXXII.—*Urine determinations for Series II.*

Period and date.	No. 7.			No. 8.			No. 9.			No. 10.			No. 11.			No. 12.		
	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).	Volume.	Specific gravity.	Total solids (factor 0.245).
Fore period.	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*	*cc.*		*Grams.*
1903—Jan. 19	1,045	1.0269	68.870	1,800	1.0169	74.514	1,540	1.0184	69.424	1,430	1.0211	73.930	1,475	1.0165	59.635	1,010	1.0239	59.130
20	710	1.0322	56.012	1,310	1.0194	62.270	1,000	1.0266	65.180	950	1.0253	58.890	975	1.0238	56.590	1,000	1.0253	61.990
21	940	1.0295	67.954	1,330	1.0232	75.990	1,105	1.0263	71.210	1,180	1.0234	67.662	1,115	1.0233	63.658	1,265	1.0238	73.762
22	800	1.0324	63.504	1,510	1.0148	54.753	965	1.0251	59.068	1,310	1.0205	65.800	1,570	1.0164	63.100	840	1.0262	53.929
23	1,380	1.0260	87.909	1,635	1.0165	66.100	1,380	1.0198	66.948	1,040	1.0221	56.308	1,090	1.0238	63.565	1,000	1.0240	58.800
24	1,340	1.0224	73.540	1,650	1.0150	60.640	1,350	1.0200	66.148	1,300	1.0215	68.480	1,010	1.0188	46.530	1,030	1.0237	59.815
25	1,220	1.0274	81.900	1,190	1.0218	63.559	1,770	1.0179	77.614	1,655	1.0169	68.522	1,760	1.0164	70.738	1,010	1.0237	58.648
26	750	1.0322	59.170	1,010	1.0244	60.380	1,040	1.0224	57.075	960	1.0249	58.568	1,420	1.0193	67.145	1,090	1.0219	58.490
27	800	1.0324	63.504	1,400	1.0186	63.800	1,220	1.0219	65.462	1,000	1.0256	62.720	1,295	1.0240	76.157	810	1.0215	42.670
Total	8,985	....	622.363	12,835	....	582.006	11,370	....	598.129	10,825	....	580.880	11,710	....	567.118	9,055	....	527.234
Average	998	1.0291	69.151	1,426	1.0190	64.667	1,263	1.0220	66.459	1,203	1.0224	64.542	1,301	1.0203	63.013	1,006	1.0238	58.582
Preservative period.																		
First subperiod:																		
1903—Jan. 28	900	1.0314	69.237	1,120	1.0225	61.734	....	....	....	1,180	1.0243	70.248	1,325	1.0220	71.419	1,110	1.0235	63.919
29	680	1.0303	50.490	1,220	1.0233	69.650	1,100	1.0223	60.099	1,420	1.0177	61.585	1,480	1.0174	63.095	1,325	1.0219	71.102
30	1,010	1.0268	66.217	1,060	1.0238	61.809	1,010	1.0249	61.005	1,360	1.0201	66.980	1,560	1.0186	71.111	1,260	1.0230	71.000
31	920	1.0295	66.498	1,220	1.0239	71.431	....	....	....	1,440	1.0208	73.380	1,650	1.0170	68.730	1,430	1.0177	62.019
Total	3,510	....	252.442	4,620	....	263.624	a4,220	....	a242.208	5,400	....	272.193	6,015	....	274.355	5,125	....	268.040
Average	878	1.0295	63.111	1,155	1.0234	65.906	a1,055	a1.0236	a 60.552	1,350	1.0207	68.048	1,504	1.0188	68.589	1,281	1.0215	67.010
Second subperiod:																		
1903—Feb. 1	1,005	1.0279	68.700	1,150	1.0259	72.979	....	....	....	1,980	1.0173	83.918	1,575	1.0183	70.623	1,265	1.0233	72.220
2	920	1.0299	67.394	b 960	1.0233	54.806	....	....	....	980	1.0240	57.630	1,080	1.0221	58.470	1,500	1.0211	77.550
3	820	1.0308	61.880	b 460	1.0233	26.260	....	....	....	1,370	1.0245	82.230	b 490	1.0321	38.573	1,270	1.0209	65.040
4	920	1.0303	68.308	b 650	1.0293	46.660	....	....	....	1,170	1.0243	69.660	b 430	1.0253	26.651	1,160	1.0229	65.094
Total	3,665	....	266.282	3,220	....	200.705	c3,972	....	c210.968	5,700	....	293.438	3,575	....	194.317	5,195	....	279.904
Average	916	1.0297	66.571	805	1.0254	50.176	c 993	c1.0237	c 52.742	1,425	1.0225	73.359	894	1.0245	48.579	1,299	1.0220	69.976

Third subperiod:																		
1903—Feb. 5	740	1.0296	53.675	b645	1.0292	46.140	940	1.0248	57.114	1,605	1.0207	81.404	b565	1.0279	38.621	1,420	1.0190	66.241
6	840	1.0293	60.303	1,150	1.0265	74.682	1,490	1.0162	59.123	1,330	1.0215	70.050	b685	1.0213	35.748	1,030	1.0244	61.579
7	1,070	1.0289	75.768	1,390	1.0184	62.660	780	1.0211	40.895	1,110	1.0202	71.270	1,220	1.0187	55.900	630	1.0250	38.586
8	880	1.0260	56.057	1,660	1.0150	61.008	1,000	1.0225	55.130	1,270	1.0220	68.450	1,910	1.0100	46.790	860	1.0233	49.095
Total	3,530	....	215.803	4,845	....	244.490	4,210	....	212.262	5,645	....	291.174	4,380	....	177.059	3,940	....	215.501
Average	882	1.0285	61.451	1,211	1.0223	61.123	1,052	1.0202	53.066	1,411	1.0211	72.793	1,095	1.0195	44.265	985	1.0229	53.875
Fourth subperiod:																		
1903—Feb. 9	960	1.0211	49.630	1,610	1.0163	64.300	890	1.0242	52.768	1,720	1.0173	72.898	1,070	1.0173	45.358	680	1.0253	42.151
10	1,950	1.0135	64.492	1,080	1.0267	70.638	860	1.0244	51.411	1,385	1.0189	64.130	1,355	1.0146	48.482	800	1.0253	49.592
Total	2,910	....	114.122	2,690	....	134.938	1,750	....	104.179	3,105	....	137.028	2,425	....	93.840	1,480	....	91.746
Average	1,455	1.0173	57.061	1,345	1.0215	67.469	875	1.0243	52.089	1,553	1.0181	68.514	1,212	1.0160	46.920	740	1.0253	45.873
Entire preservative period:																		
Average	972	1.0275	62.760	1,098	1.0232	60.218	....	....	....	1,418	1.0206	70.988	1,171	1.0202	52.827	1,124	1.0229	61.085
After period.																		
1903—Feb. 11	1,420	1.0124	43.139	1,220	1.0224	66.953	890	1.0246	53.640	....	....	....	1,090	1.0189	50.470	650	1.0251	39.975
12	1,390	1.0117	39.851	920	1.0253	57.032	860	1.0270	56.880	....	....	....	1,100	1.0187	50.402	1,000	1.0261	63.950
13	1,340	1.0131	43.013	1,050	1.0269	69.200	810	1.0272	53.978	....	....	....	820	1.0218	43.795	640	1.0273	42.805
14	980	1.0140	33.614	760	1.0267	49.710	980	1.0262	62.916	....	....	....	1,510	1.0141	52.170	700	1.0295	50.603
15	750	1.0152	27.932	1,660	1.0164	66.690	840	1.0273	56.190	....	....	....	1,690	1.0146	60.452	1,110	1.0223	60.652
Total	5,880	....	187.549	5,610	....	309.585	4,380	....	283.604	....	....	....	6,210	....	257.289	4,100	....	257.985
Average	1,176	1.0133	37.510	1,122	1.0235	61.917	876	1.0265	56.721	....	....	....	1,242	1.0176	51.458	820	1.0261	51.597

a Total calculated on basis of figures obtained for two days.
b Nos. 8 and 11 sick during part of period.
c Total and average for second subperiod obtained by averaging data for remainder of preservative period.

TABLE XXXIII.—*Urine determinations for the supplementary preservative period of Series II.*

Period and date.	No. 8.				No. 9.				No. 11.				No. 12.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
	cc.		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—Feb. 16	1,220	1.0218	65.615	8.780	850	1.0273	56.860	9.780	1,520	1.0146	54.375	8.66	2,010	1.0163	80.280	20.800
17	1,790	1.0150	65.781	12.530	810	1.0270	53.580	7.940	1,420	1.0169	58.790	8.24	1,460	1.0186	66.535	14.020
18	1,500	1.0192	70.560	12.450	1,180	1.0199	57.538	11.210	1,320	1.0162	52.390	8.45	1,150	1.0224	63.020	14.610
19	1,410	1.0216	74.620	12.690	1,345	1.0203	66.895	12.910	1,150	1.0175	49.315	8.74	1,570	1.0195	75.010	16.960
20	1,920	1.0143	67.270	14.980	910	1.0212	47.265	7.740	1,180	1.0180	52.040	9.56	1,930	1.0161	76.142	20.650
Total	7,840	....	343.846	61.430	5,095	....	282.138	49.580	6,590	....	266.910	43.65	8,120	....	360.987	87.040
Average	1,568	1.0184	68.769	12.286	1,019	1.0231	56.428	9.916	1,318	1.0166	53.382	8.73	1,624	1.0186	72.197	17.408

TABLE XXXIV.—*Summary of urine determinations for Series II, Nos. 7 and 10.*

[Averages per man per day.]

Period.	Volume.	Specific gravity.	Total solids.
	cc.		*Grams.*
Fore period	1,101	1.0258	66.847
Preservative period:			
First subperiod	1,114	1.0251	65.580
Second subperiod	1,171	1.0261	69.965
Third subperiod	1,147	1.0248	67.122
Fourth subperiod	1,504	1.0177	62.788
Average for entire preservative period	1,196	1.0235	66.874

TABLE XXXV.—*Urine determinations for Series III.*

Period and date.	No. 1. Volume.	No. 1. Specific gravity.	No. 1. Total solids (factor 0.245).	No. 1. Sodium chlorid.	No. 2.[a] Volume.	No. 2.[a] Specific gravity.	No. 2.[a] Total solids (factor 0.245).	No. 2.[a] Sodium chlorid.	No. 3. Volume.	No. 3. Specific gravity.	No. 3. Total solids (factor 0.245).	No. 3. Sodium chlorid.
Fore period.	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—Feb. 19	1,160	1.0249	70.766	14.62	1,035	1.0230	58.822	10.970	800	1.0261	51.156	11.360
20	930	1.0283	64.482	11.63	1,020	1.0231	57.727	9.590	890	1.0253	55.167	10.590
21	900	1.0287	63.284	10.80	940	1.0258	59.417	10.340	[b] 863	....	[b] 57.853	[b] 9.965
22	990	1.0296	71.795	14.255	1,030	1.0270	68.131	13.599	1,040	1.0250	63.700	12.481
23	880	1.0283	61.015	10.032	940	1.0266	61.260	10.715	1,050	1.0274	70.486	11.760
24	960	1.0288	67.738	11.905	900	1.0293	64.606	11.889	745	1.0291	53.662	8.195
25	820	1.0303	60.873	8.856	840	1.0260	53.508	8.316	780	1.0273	52.170	7.255
26	860	1.0300	63.210	8.860	1,080	1.0220	58.212	8.860	860	1.0260	51.782	9.200
27	880	1.0292	62.955	9.241	1,070	1.0230	60.294	9.740	740	1.0285	51.670	8.880
Total	8,380	....	586.118	100.199	8,855	....	541.480	94.019	7,768	....	510.646	89.686
Average	931	1.0287	65.124	11.133	984	1.0251	60.164	10.447	863	1.0269	56.738	9.965
Preservative period.												
First subperiod:												
1903—Feb. 28	920	1.0295	66.493	9.936	1,040	1.0246	62.681	10.609	720	1.0271	47.804	6.769
Mar. 1	910	1.0293	67.478	10.152	1,120	1.0230	63.112	10.080	1,070	1.0244	63.965	12.412
2	870	1.0292	62.240	9.919	1,110	1.0227	61.733	10.102	800	1.0264	51.744	8.800
3	860	1.0297	62.578	9.288	860	1.0279	58.785	8.944	840	1.0273	56.183	8.400
Total	3,590	....	258.789	39.295	4,130	....	246.311	39.735	3,430	....	219.696	36.381
Average	898	1.0294	64.697	9.824	1,033	1.0246	61.578	9.934	858	1.0263	54.924	9.095
Second subperiod:												
1903—Mar. 4	950	1.0289	67.265	9.215	930	1.0282	64.254	9.393	950	1.0241	56.093	8.075
5	960	1.0262	61.622	8.352	740	1.0293	53.121	7.030	1,020	1.0225	56.228	9.384
6	890	1.0268	58.437	6.497	660	1.0295	47.702	5.806	1,060	1.0231	59.991	11.555
7	960	1.0267	62.798	8.929	760	1.0288	53.626	7.752	860	1.0252	53.096	9.460
Total	3,760	....	250.122	32.993	3,090	....	218.703	29.981	3,890	....	225.408	38.474
Average	940	1.0272	62.530	8.248	773	1.0290	54.676	7.495	972	1.0237	56.352	9.618
Third subperiod:												
1903—Mar. 8	990	1.0268	65.003	9.504	695	1.0307	52.274	7.367	880	1.0247	53.253	6.776
9	970	1.0248	58.937	8.342	640	1.0271	42.493	2.240	860	1.0251	52.886	7.999
10	1,020	1.0250	62.475	8.570	640	1.0270	42.336	1.216	740	1.0261	47.863	5.550
11	1,060	1.0212	62.847	9.964	745	1.0234	42.711	5.439	680	1.0255	42.483	5.032
Total	4,040	....	249.262	36.380	2,720	....	179.814	16.262	3,160	....	196.485	25.357
Average	1,010	1.0252	62.316	9.095	680	1.0271	44.954	4.066	790	1.0254	49.121	6.339

[a] Received preservative till lunch March 5, none thereafter; sick.

[b] Approximate figure in each case, added to complete the record.

TABLE XXXV.—*Urine determinations for Series III*—Continued.

Period and date.	No. 1.				No. 2.*a*				No. 3.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Entire preservative period:	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
Average	949	1.0273	63.181	9.056	828	1.0269	53.736	7.165	873	1.0251	53.466	8.351
After period.												
1903—Mar. 12	880	1.0260	56.056	5.104	900	1.0218	48.069	3.780	580	1.0272	38.651	4.060
13	925	1.0241	54.617	4.255	930	1.0229	52.178	7.254	730	1.0277	49.541	5.548
14	1,080	1.0256	67.738	7.020	1,130	1.0255	70.597	11.074	710	1.0277	48.184	5.893
15	1,180	1.0209	60.422	7.080	900	1.0233	51.376	9.090	600	1.0298	43.806	3.600
16	1,040	1.0226	57.585	8.216	935	1.0256	58.643	11.313	650	1.0272	43.316	5.461
17	1,060	1.0231	59.991	8.692	1,000	1.0234	57.330	10.000	630	1.0266	41.057	6.048
18	1,095	1.0216	57.947	8.322	840	1.0262	53.920	9.576	720	1.0263	46.393	7.128
19	960	1.0224	52.685	7.488	820	1.0260	52.234	8.446	700	1.0268	45.962	6.860
Total	8,220	....	467.041	56.177	7,455	....	444.347	70.533	5,320	....	356.910	44.598
Average	1,028	1.0233	58.380	7.022	932	1.0243	55.543	8.817	665	1.0274	44.612	5.575

Period and date.	No. 4.				No. 5.				No. 6.*b*			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Fore period.	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—Feb. 19	*a* 1,091	....	*a* 59.236	....	1,070	1.0280	73.402	17.760	540	1.0282	37.309	6.590
20	1,480	1.0164	59.466	13.760	1,160	1.0289	82.134	18.910	730	1.0283	50.615	9.860
21	1,000	1.0219	53.655	10.000	1,130	1.0275	76.134	17.820	740	1.0270	48.951	8.433
22	930	1.0258	58.785	12.090	1,210	1.0270	80.042	19.480	710	1.0274	47.662	10.153
23	990	1.0273	66.216	9.701	1,150	1.0277	78.045	18.170	760	1.0284	52.881	9.424
24	885	1.0254	55.074	8.143	1,150	1.0271	76.354	14.030	760	1.0294	54.743	9.120
25	950	1.0252	58.653	8.700	1,150	1.0278	78.326	15.410	800	1.0287	56.252	8.560
26	1,400	1.0212	72.716	15.120	1,310	1.0279	89.545	13.890	740	1.0294	53.302	7.920
27	1,090	1.0222	59.285	13.630	1,340	1.0260	85.358	20.370	760	1.0300	55.860	9.270
Total	9,816	....	543.086	91.144	10,670	....	719.340	155.840	6,540	....	457.575	79.330
Average	1,091	1.0232	60.481	11.393	1,186	1.0275	79.927	17.316	727	1.0285	50.842	8.814

Preservative period.												
First subperiod:												
1903—Feb. 28	980	1.0275	66.028	12.152	1,200	1.0260	76.440	10.082	780	1.0292	55.801	8.424
Mar. 1	840	1.0283	58.241	9.324	1,220	1.0262	78.312	10.859	640	1.0293	45.942	5.056
2	1,130	1.0266	73.642	14.917	1,120	1.0277	76.009	9.408	630	1.0247	38.124	3.528
3	1,560	1.0188	71.854	14.820	1,130	1.0280	77.518	14.125	860	1.0244	51.411	4.644
Total	4,510	....	269.765	51.213	4,670	....	308.279	44.474	2,910	....	191.278	21.652
Average	1,128	1.0253	67.441	12.803	1,168	1.0270	77.070	11.118	728	1.0269	47.820	5.413
Second subperiod:												
1903—Mar. 4	1,120	1.0256	70.246	13.330	1,240	1.0269	81.722	14.510	870	1.0250	53.288	5.220
5	1,250	1.0221	67.681	12.250	1,180	1.0279	80.659	12.960	790	1.0264	51.097	5.688
6	2,380	1.0118	68.806	15.231	1,100	1.0274	73.843	13.420	720	1.0245	43.218	4.824
7	1,050	1.0234	60.196	11.235	1,180	1.0261	75.455	13.570	955	1.0256	59.898	8.024
Total	5,800	....	266.929	52.046	4,700	....	311.679	54.460	3,335	....	207.501	23.756
Average	1,450	1.0207	66.732	13.012	1,175	1.0271	77.920	13.615	834	1.0254	51.875	5.939
Third subperiod:												
1903—Mar. 8	1,460	1.0133	47.574	8.761	1,120	1.0261	71.618	13.105	650	1.0269	42.838	5.720
9	1,080	1.0192	50.803	8.856	1,230	1.0270	81.364	18.450	830	1.0266	54.091	7.304
10	1,080	1.0200	52.920	7.561	1,010	1.0277	68.544	12.929	860	1.0255	53.728	8.085
11	1,870	1.0095	43.524	8.042	660	1.0314	50.774	4.620	800	1.0257	50.372	6.721
Total	5,490	....	194.821	33.220	4,020	....	272.300	49.104	3,140	....	201.029	27.830
Average	1,372	1.0155	48.705	8.305	1,005	1.0280	68.075	12.276	785	1.0262	50.257	6.958
Entire preservative period:												
Average	1,317	1.0205	60.960	11.373	1,116	1.0274	74.355	12.336	782	1.0262	49.988	6.103
After period.												
1903—Mar. 12	620	1.0257	39.038	4.588	730	1.0321	57.411	3.796	850	1.0268	55.811	6.544
13	620	1.0279	42.380	6.572	910	1.0291	64.878	9.282	740	1.0277	50.220	5.772
14	780	1.0210	40.131	6.396	1,240	1.0279	84.760	17.856	800	1.0268	52.528	6.560
15	600	1.0272	39.984	6.360	1,220	1.0240	71.736	14.274	820	1.0275	55.248	7.134
16	c889	....	c43.463	c7.628	1,060	1.0261	67.782	8.056	640	1.0268	42.022	4.864
17	690	1.0280	47.334	8.556	1,145	1.0260	72.936	13.398	710	1.0275	47.836	5.254
18	790	1.0271	52.452	10.113	1,110	1.0273	74.242	14.765	720	1.0276	48.686	6.480
19	2,120	1.0104	54.018	10.812	1,000	1.0284	69.580	11.400	770	1.0284	53.577	7.700
Total	7,109	....	358.800	61.025	8,415	....	563.325	92.827	6,050	....	405.928	50.308
Average	889	1.0239	44.850	7.628	1,052	1.0276	70.416	11.603	756	1.0274	50.741	6.289

[a] Received preservative till lunch March 5, none thereafter; sick.
[b] No preservative in parts of first and second subperiods; regular after lunch March 6.
[c] Approximate figure in each case, added to complete the record.

TABLE XXXVI.—*Summary of urine determinations for Series III for Nos. 1, 3, 4, and 5.*

[Averages per man per day.]

Period.	Volume.	Specific gravity.	Total solids.	Sodium chlorid.
	cc.		*Grams.*	*Grams.*
Fore period	1,018	1.0266	65.533	12.452
Preservative period:				
First subperiod	1,013	1.0270	66.033	10.710
Second subperiod	1,134	1.0247	65.884	11.123
Third subperiod	1,044	1.0235	57.054	9.004
Average for entire preservative period	1,064	1.0251	62.990	10.279
After period	908	1.0256	54.564	7.957

TABLE XXXVII.—*Urine determinations for Series IV.*

Period and date.	No. 7.				No. 8.				No. 9.				No. 10.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Fore period.	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—Mar. 20	420	1.0290	29.845	4.818	1,215	1.0206	61.320	8.153	1,170	1.0221	63.357	7.968	1,150	1.0239	67.350	12.744
21	690	1.0312	52.742	6.707	1,170	1.0229	65.650	10.238	1,450	1.0179	63.600	6.496	1,080	1.0247	65.360	10.292
22	660	1.0284	45.924	6.991	980	1.0260	62.452	9.046	1,915	1.0132	61.945	7.468	1,280	1.0222	69.630	10.829
23	860	1.0275	57.944	10.700	720	1.0282	49.740	6.091	900	1.0266	58.662	5.868	920	1.0263	59.284	7.783
24	670	1.0246	40.378	5.930	800	1.0253	49.590	4.592	995	1.0255	62.170	6.199	770	1.0301	56.780	4.350
25	760	1.0255	47.485	8.490	1,030	1.0268	67.640	7.509	1,520	1.0169	62.920	6.370	930	1.0285	64.930	4.975
26	695	1.0312	53.124	7.430	970	1.0253	60.130	7.547	940	1.0241	55.500	4.672	790	1.0299	57.880	4.077
27	580	1.0320	45.474	6.369	1,075	1.0228	60.050	7.009	1,010	1.0247	61.120	6.484	845	1.0286	59.210	6.160
Total	5,335	....	372.916	57.435	7,960	....	476.572	60.185	9,900	....	489.274	51.525	7,765	....	500.424	61.210
Average	667	1.0287	46.615	7.179	995	1.0247	59.572	7.523	1,238	1.0214	61.159	6.441	971	1.0268	62.553	7.651
Preservative period.																
First subperiod:																
1903—Mar. 28	780	1.0318	60.774	9.704	835	1.0237	48.500	6.129	1,000	1.0257	62.970	7.050	920	1.0293	66.050	8.502
29	630	1.0307	46.900	7.195	1,130	1.0220	60.208	8.080	1,370	1.0182	61.090	7.535	1,085	1.0221	58.700	7.335
30	730	1.0320	57.235	9.789	1,090	1.0242	64.638	7.794	1,565	1.0164	62.900	7.778	820	1.0283	56.860	6.462
31	600	1.0334	49.104	6.822	910	1.0258	57.510	5.979	1,265	1.0205	63.528	8.121	800	1.0299	58.602	6.456
Total	2,740	....	214.013	33.510	3,965	....	230.856	27.982	5,200	....	250.488	30.484	3,625	....	240.212	28.755
Average	685	1.0320	53.503	8.378	991	1.0239	57.714	6.996	1,300	1.0202	62.622	7.621	906	1.0274	60.053	7.189

Second subperiod:																
1903—Apr. 1	550	1.0300	40.430	7.937	1,055	1.0243	62.820	8.925	1,340	1.0176	57.780	6.271	810	1.0295	58.545	6.691
2					710	1.0287	49.925	4.146	1,085	1.0234	62.215	7.074	650	1.0279	44.432	5.493
3					955	1.0257	60.128	7.574	1,000	1.0271	66.150	7.240	960	1.0310	72.921	7.652
4					1,180	1.0211	61.090	8.720	1,595	1.0178	69.559	10.478	880	1.0268	57.888	7.539
Total					3,900		233.963	29.365	5,020		255.704	31.063	3,300		233.786	27.375
Average					975	1.0250	58.491	7.341	1,255	1.0215	63.926	7.766	825	1.0288	58.447	6.844
Third subperiod:																
1903—Apr. 5					1,010	1.0217	53.690	6.827	1,500	1.0170	62.478	7.230	1,490	1.0173	63.165	9.492
6					930	1.0269	61.290	5.970	1,260	1.0208	64.220	6.993	800	1.0262	51.360	6.688
7					880	1.0264	56.670	4.417	1,420	1.0183	63.670	6.915	1,020	1.0269	67.222	8.478
8					1,000	1.0252	61.740	8.070	1,100	1.0221	59.565	5.412	960	1.0240	56.550	7.046
9					820	1.0281	56.458	6.224	1,250	1.0235	71.980	8.750	815	1.0282	56.305	6.766
Total					4,640		289.848	31.508	6,530		320.913	35.300	5,085		294.602	38.470
Average					928	1.0257	57.970	6.302	1,306	1.0203	64.183	7.060	1,017	1.0245	58.920	7.694
Fourth subperiod:																
1903—Apr. 10					810	1.0257	51.005	5.160	1,300	1.0206	65.620	6.396	790	1.0279	54.002	6.336
11					1,005	1.0247	60.820	6.944	1,720	1.0159	67.010	8.204	1,190	1.0237	69.118	8.449
12					1,455	1.0163	58.988	7.290	1,695	1.0164	68.120	8.661	1,540	1.0165	62.260	7.654
13					665	1.0240	39.105	3.784	1,020	1.0217	54.220	5.661	1,140	1.0210	58.662	7.594
14					800	1.0240	47.040	3.704	1,695	1.0156	64.780	7.848	1,245	1.0148	45.160	5.404
Total					4,735		256.958	26.882	7,430		319.750	36.770	5,905		289.202	35.437
Average					947	1.0230	51.392	5.376	1,486	1.0180	63.950	7.354	1,181	1.0208	57.840	7.087
Entire preservative period:																
Average					958	1.0245	56.201	6.504	1,343	1.0200	63.670	7.423	995	1.0254	58.815	7.224
After period.																
1903—Apr. 15					1,180	1.0184	53.198	6.408	1,780	1.0137	59.750	6.568	595	1.0207	30.180	3.820
16					860	1.0216	45.520	3.939	2,035	1.0127	63.390	8.914	840	1.0237	48.780	8.280
17					790	1.0252	48.775	3.200	1,080	1.0232	61.388	6.307	1,375	1.0180	60.540	11.097
18					695	1.0283	48.180	3.822	1,175	1.0200	57.580	5.441	720	1.0280	49.390	4.522
19					890	1.0260	56.692	5.624	990	1.0235	56.759	7.514	880	1.0263	56.710	6.416
20					820	1.0265	53.245	4.387	1,180	1.0206	65.340	7.231	680	1.0280	46.640	4.563
21					1,010	1.0240	59.385	6.191	1,570	1.0159	61.160	7.348	1,050	1.0273	70.240	6.689
22					960	1.0214	50.338	5.050	1,180	1.0209	60.427	8.154	770	1.0240	45.280	6.438
Total					7,205		415.333	38.621	10,990		485.794	57.480	6,910		407.860	51.825
Average					901	1.0239	51.917	4.828	1,374	1.0191	60.724	7.185	864	1.0245	50.983	6.478

TABLE XXXVII.—*Urine determinations for Series IV*—Continued.

Period and date.	No. 11.				No. 12.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Fore period (excluded).	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—Mar. 20	1,380	1.0146	49.375	6.983	1,130	1.0213	58.963	11.313
21	1,310	1.0167	53.605	6.628	1,150	1.0249	70.160	12.524
22	1,835	1.0130	58.440	6.257	1,675	1.0146	59.930	8.325
23	1,020	1.0206	51.480	5.161	1,140	1.0244	68.150	10.420
24	1,405	1.0158	54.050	4.651	1,365	1.0181	60.540	11.944
25	1,420	1.0173	60.198	6.092	990	1.0239	57.980	10.485
26	1,255	1.0162	49.810	5.748	1,710	1.0158	66.190	11.817
27	1,240	1.0197	59.858	7.478	1,145	1.0216	60.625	10.638
Total	10,865	....	436.816	48.998	10,305	....	502.538	87.466
Average	1,358	1.0167	54.602	6.125	1,288	1.0206	62.817	10.933
Preservative period (excluded).								
First subperiod:								
1903—Mar. 28	1,445	1.0158	55.938	7.803	940	1.0256	58.958	9.043
29	1,400	1.0171	58.650	7.910	960	1.0262	61.630	9.676
30	815	1.0192	38.340	4.401	905	1.0261	57.587	9.932
31	......	....	....	....	[a]935	....	[a]59.392	[a]9.550
Total	......	....	....	....	3,740	....	237.567	38.201
Average	......	....	....	....	935	1.0259	59.392	9.550
Fore period.								
1903—Mar. 31	970	1.0144	34.220	2.842	......	....	....	....
Apr. 1	360	1.0306	26.995	1.123	......	....	....	....
2	840	1.0188	38.700	1.932	......	....	....	....
3	925	1.0184	41.708	2.803	760	1.0251	46.735	7.168
4	......	....	....	....	1,220	1.0198	59.180	12.334
5	......	....	....	....	1,890	1.0144	66.679	14.988
Total	3,095	....	141.623	8.700	3,870	....	172.594	34.490
Average	774	1.0206	35.406	2.175	1,290	1.0198	57.531	11.497
Preservative period.								
1903—Mar. 4	1,455	1.0154	54.900	6.024	......	....	....	....
5	1,620	1.0144	57.158	6.318	......	....	....	....
6	800	1.0233	45.680	4.752	1,500	1.0195	71.670	15.160
7	1,140	1.0191	53.345	5.438	1,210	1.0226	67.000	13.287
8	1,120	1.0172	47.200	5.018	980	1.0233	55.959	9.663
9	1,020	1.0189	47.230	4.865	1,070	1.0249	65.280	10.093
10	1,045	1.0210	53.780	4.327	1,250	1.0212	64.930	11.300
11	1,400	1.0160	54.880	5.726	1,245	1.0162	49.415	7.991
12	1,610	1.0134	52.900	5.023	1,260	1.0202	62.360	10.232
13	1,355	1.0177	58.763	4.959	1,085	1.0224	59.545	9.332
14	920	1.0236	53.202	3.956	1,555	1.0182	69.340	15.038
Total	13,485	....	579.038	56.406	11,155	....	565.499	102.099
Average	1,226	1.0182	52.640	5.128	1,239	1.0209	62.833	11.344
After period.								
1903—Mar. 15	1,195	1.0169	49.485	5.067	1,045	1.0160	40.965	7.012
16	1,115	1.0166	45.350	4.182	900	1.0237	52.263	7.138
17	1,000	1.0195	47.775	3.610	650	1.0246	39.170	5.564
18	815	1.0257	51.320	4.360	900	1.0248	54.684	9.009
19	1,005	1.0207	50.960	5.869	1,095	1.0232	62.240	13.514
20	900	1.0225	49.617	5.778	1,345	1.0168	55.360	10.854
21	1,150	1.0195	54.948	5.209	1,670	1.0132	54.008	9.101
22	1,200	1.0182	53.508	6.540	955	1.0223	52.165	7.057
Total	8,380	....	402.963	40.615	8,560	....	410.915	69.249
Average	1,048	1.0200	50.370	5.077	1,070	1.0206	51.364	8.656

[a] Average in each case, added to complete the record.

Table XXXVIII.—*Summary of urine determinations for Series IV.*

[Averages per man per day.]

THREE MEN.

Period.	Volume.	Specific gravity.	Total solids.	Sodium chlorid.
	cc.	*Grams.*	*Grams.*	*Grams.*
Fore period	1,065	1.0244	61.095	7.205
Preservative period:				
First subperiod	1,066	1.0238	60.130	7.269
Second subperiod	1,018	1.0251	60.288	7.317
Third subperiod	1,084	1.0235	60.358	7.019
Fourth subperiod	1,205	1.0206	57.728	6.606
Average	1,099	1.0232	59.579	7.026
After period for entire preservative period	1,046	1.0225	54.541	6.163

TWO MEN.

Period.	Volume.	Specific gravity.	Total solids.	Sodium chlorid.
Fore period	1,032	1.0202	46.469	6.836
Preservative period	1,232	1.0196	57.737	8.236
After period	1,059	1.0203	50.867	6.867

FIVE MEN.

Period.	Volume.	Specific gravity.	Total solids.	Sodium chlorid.
Fore period	1,032	1.0247	58.543	7.946
First subperiod	963	1.0259	58.657	7.947

TABLE XXXIX.—*Urine determinations for Series V.*

Period and date.	No. 1.				No. 2.				No. 3.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Fore period.	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—Apr. 24	860	....	a 60.830	....	840	1.0280	57.624	....	870	1.0248	52.861	....
25	880	1.0294	63.386	....	880	1.0244	52.610	....	640	1.0238	37.318	....
26	935	1.0267	61.163	....	890	1.0234	51.022	....	880	1.0248	53.469	....
27	850	1.0284	59.160	....	780	1.0276	52.741	....	790	1.0260	50.323	....
28	860	1.0284	59.856	7.645	800	1.0285	55.876	6.920	980	1.0252	60.505	7.526
29	795	1.0308	59.991	7.330	680	1.0327	54.481	6.601	645	1.0309	48.829	4.334
30	800	1.0334	65.464	7.224	605	1.0329	48.770	3.945	740	1.0290	52.577	7.148
May 1	760	1.0305	56.791	5.358	745	1.0296	54.029	3.487	735	1.0270	48.622	5.895
Total	6,740	....	486.641	27.557	6,220	....	427.153	20.953	6,280	....	404.504	24.903
Average	842	1.0297	60.830	6.889	778	1.0284	53.394	5.238	785	1.0264	50.563	6.226
Preservative period.												
First subperiod:												
1903—May 2	880	1.0291	62.739	7.515	820	1.0270	51.242	5.207	830	1.0260	52.871	6.358
3	900	1.0287	63.284	8.118	795	1.0280	54.528	6.320	700	1.0253	43.389	4.515
4	880	1.0348	75.029	8.967	950	1.0243	56.560	6.631	a 842	....	a 52.396	a 6.906
5	845	1.0295	61.072	9.303	870	1.0236	50.300	6.038	790	1.0258	49.936	5.514
6	800	1.0310	60.760	7.760	915	1.0285	63.910	8.967	860	1.0240	50.568	5.341
7	780	1.0310	59.241	6.864	570	1.0317	44.270	4.589	780	1.0258	49.304	5.671
8	760	1.0307	57.163	7.076	680	1.0266	44.315	4.087	850	1.0246	51.229	8.288
9	800	1.0331	64.876	8.456	725	1.0281	49.915	5.060	800	1.0254	49.784	6.944
10	800	1.0303	59.388	8.616	680	1.0289	48.150	6.895	920	1.0216	66.337	8.970
11	830	1.0301	61.208	9.661	735	1.0277	49.885	6.740	950	1.0236	54.929	7.648
12	860	1.0310	65.317	9.804	795	1.0287	55.900	7.362	920	1.0246	55.448	8.832
13	720	1.0333	58.741	5.378	640	1.0340	53.310	5.401	865	1.0248	52.557	7.889
Total	9,855	....	748.818	97.518	9,175	....	625.285	73.297	10,107	....	628.748	82.876
Average	821	1.0311	62.402	8.126	765	1.0281	52.107	6.108	842	1.0229	52.396	6.906
Second subperiod:												
1903—May 14	870	1.0293	62.453	7.726	695	1.0322	54.830	5.762	840	1.0278	57.212	7.703
15	800	1.0297	58.212	7.992	675	1.0289	47.800	5.008	780	1.0265	50.642	5.678
16	790	1.0276	53.420	6.952	800	1.0268	52.528	5.000	845	1.0273	56.522	7.056
17	790	1.0310	60.000	7.663	680	1.0308	51.312	5.372	790	1.0279	54.004	7.308
18	760	1.0303	56.419	6.460	670	1.0277	45.475	3.551	850	1.0254	52.896	6.970
19	810	1.0318	63.107	8.060	645	1.0297	46.935	4.354	710	1.0290	50.446	6.638
20	720	1.0331	58.388	7.344	790	1.0264	51.100	3.911	520	1.0315	40.134	2.808
21	745	1.0327	59.686	6.631	600	1.0309	45.423	4.080	780	1.0288	55.037	3.861

22	760	1.0314	58.467	5.700	620	1.0320	48.610	4.898	780	1.0272	51.998	6.396
23	805	1.0288	56.801	5.997	910	1.0214	47.710	4.186	1,020	1.0232	57.977	10.608
24	850	1.0282	58.744	6.630	1,065	1.0200	52.185	7.668	940	1.0240	55.272	9.400
25	895	1.0276	60.520	8.368	710	1.0254	44.180	5.254	1,090	1.0198	52.876	8.884
Total	9,595	....	706.217	85.523	8,860	....	588.088	59.044	9,945	....	635.016	83.310
Average	800	1.0301	58.851	7.127	738	1.0277	49.007	4.920	827	1.0265	52.918	6.942
Third subperiod:												
1903—May 26	865	1.0291	61.675	9.126	1,075	1.0188	49.515	6.181	1,075	1.0208	54.782	8.116
27	835	1.0302	61.782	7.640	820	1.0245	49.225	6.601	910	1.0248	55.292	7.553
28	775	1.0309	58.675	7.363	580	1.0300	42.630	4.698	920	1.0246	55.448	6.854
29	800	1.0312	61.520	8.480	700	1.0285	48.881	5.845	720	1.0265	47.496	8.028
30	785	1.0324	62.313	7.850	710	1.0285	49.579	5.396	840	1.0311	64.008	8.148
31	740	1.0315	57.113	7.289	730	1.0274	49.005	5.731	835	1.0274	56.054	6.346
June 1	800	1.0305	59.776	7.840	690	1.0264	44.636	4.658	810	1.0264	52.399	5.468
2	825	1.0307	62.057	8.126	600	1.0288	42.336	5.160	890	1.0255	55.607	8.144
3	805	1.0300	59.168	7.487	570	1.0283	39.524	4.361	760	1.0273	50.836	5.624
4	825	1.0308	62.255	7.095	565	1.0308	42.634	5.255	790	1.0272	52.646	7.150
5	800	1.0308	60.368	7.240	505	1.0287	35.512	3.889	710	1.0262	45.574	6.177
6	835	1.0297	60.763	8.058	900	1.0199	43.884	5.085	720	1.0270	47.628	5.220
Total	9,690	....	727.460	93.594	8,445	....	537.361	62.860	9,980	....	637.770	82.828
Average	808	1.0307	60.622	7.800	704	1.0267	44.780	5.238	832	1.0262	53.148	6.902
Fourth subperiod:												
1903—June 7	755	1.0306	56.602	6.644	830	1.0187	38.031	5.271	785	1.0256	49.235	5.103
8	810	1.0301	59.729	9.518	600	1.0256	37.632	3.750	780	1.0251	47.970	5.577
9	725	1.0310	55.064	6.416	490	1.0282	33.859	4.214	675	1.0283	46.805	4.894
10	800	1.0297	58.216	7.560	695	1.0231	39.337	4.379	635	1.0286	44.494	3.874
11	810	1.0294	58.352	6.804	580	1.0287	40.786	4.466	835	1.0255	52.173	6.555
12	830	1.0296	60.192	8.217	[b]720	1.0201	35.460	4.140	1,125	1.0200	55.125	7.650
13	835	1.0297	60.763	7.807	720	1.0253	44.633	6.156	1,285	1.0183	57.619	8.031
14	785	1.0310	59.621	6.947	790	1.0248	48.000	7.900	1,130	1.0212	58.692	7.967
15	815	1.0293	58.509	7.702	660	1.0230	37.191	5.313	790	1.0268	51.871	5.293
16	795	1.0305	59.402	7.553	790	1.0272	52.646	7.703	750	1.0283	52.005	4.950
17	740	1.0309	56.025	6.882	640	1.0302	47.336	6.336	675	1.0276	45.644	2.363
18	800	1.0299	58.608	7.360	650	1.0283	45.071	5.655	840	1.0241	49.602	6.468
19	780	1.0302	57.712	7.020	665	1.0283	46.111	5.619	830	1.0282	57.345	7.844
20	745	1.0306	55.853	7.264	1,045	1.0176	45.060	5.329	700	1.0282	48.363	4.695
Total	11,025	....	814.648	103.694	9,875	....	591.153	76.231	11,835	....	716.943	81.264
Average	788	1.0302	58.189	7.407	705	1.0249	42.225	5.445	845	1.0254	51.210	5.805
Entire preservative period:												
Average	804	1.0305	60.016	7.615	728	1.0269	47.030	5.428	834	1.0253	52.418	6.639

[a] Average added to complete the record.

[b] No preservative administered to No. 2 after June 11.

TABLE XXXIX.—*Urine determinations for Series V*—Continued.

Period and date.	No. 1.				No. 2.				No. 3.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
After period.	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—June 21	790	1.0310	60.000	6.992	870	1.0229	48.811	6.612	880	1.0267	57.565	7.920
22	735	1.0302	54.383	7.350	800	1.0218	42.728	5.400	695	1.0256	43.590	6.012
23	835	1.0304	62.196	9.811	710	1.0253	44.009	5.467	1,090	1.0224	59.819	7.794
24	760	1.0310	57.722	5.852	880	1.0216	46.571	4.664	940	1.0235	54.121	5.922
25	800	1.0305	59.780	7.960	710	1.0282	49.050	5.786	830	1.0264	53.684	7.346
26	740	1.0319	57.835	7.733	1,240	1.0184	55.900	9.982	1,000	1.0257	62.965	10.000
27	760	1.0323	60.143	7.182	945	1.0205	47.470	7.088	1,010	1.0274	67.801	....
28	840	1.0304	62.563	8.148	965	1.0254	60.051	8.540	790	1.0285	55.158	6.478
29	845	1.0300	62.108	8.577	845	1.0261	54.029	7.522	805	1.0275	54.237	6.199
Total	7,105	....	536.730	69.605	7,965	....	448.619	61.061	8,040	....	508.940	57.671
Average	789	1.0308	59.637	7.734	885	1.0234	49.847	6.785	893	1.0260	56.549	7.209

Period and date.	No. 4.				No. 5.				No. 6.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Fore period.	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—April 24	850	1.0254	52.900	....	880	1.0301	64.896	....	540	1.0291	38.495	....
25	840	1.0254	52.260	....	870	1.0294	62.666	....	665	1.0279	45.455	....
26	740	1.0251	45.506	....	1,010	1.0249	61.615	....	755	1.0260	48.090	....
27	855	1.0241	50.483	....	840	1.0307	63.181	....	660	1.0261	42.210	....
28	810	1.0279	55.360	5.759	765	1.0320	59.976	5.439	640	1.0302	47.757	5.357
29	735	1.0275	49.520	5.402	860	1.0314	66.160	6.992	640	1.0301	47.195	5.389
30	820	1.0258	51.830	5.502	880	1.0319	68.776	5.649	635	1.0318	49.470	5.639
May 1	2,260	1.0119	65.890	11.232	850	1.0317	66.015	3.859	645	1.0288	45.510	5.669
Total	7,910	....	423.749	27.895	6,955	....	513.285	21.939	5,180	....	364.182	22.054
Average	989	1.0241	52.969	6.974	869	1.0303	64.161	5.485	648	1.0288	45.523	5.514

Preservative period.												
First subperiod:												
1903—May 2	2,030	1.0118	58.685	10.921	995	1.0265	64.600	8.975	735	1.0287	51.680	7.842
3	1,020	1.0224	55.980	9.415	1,230	1.0238	71.721	10.861	825	1.0250	50.530	6.559
4	1,250	1.0201	62.480	10.913	945	1.0288	68.679	9.261	680	1.0284	47.310	7.126
5	910	1.0247	55.070	8.899	840	1.0306	62.975	6.846	585	1.0296	42.450	5.733
6	1,080	1.0216	57.155	7.128	925	1.0301	68.214	7.816	660	1.0298	48.190	6.072
7	860	1.0250	52.730	8.187	830	1.0310	63.039	7.287	720	1.0284	50.100	7.890
8	730	1.0284	50.795	6.336	880	1.0298	64.249	7.770	590	1.0311	44.955	5.092
9	745	1.0267	48.730	6.973	820	1.0292	58.663	7.634	660	1.0300	48.515	6.528
10	790	1.0259	50.130	6.818	870	1.0296	63.092	9.622	700	1.0288	49.392	7.367
11	780	1.0272	51.980	7.340	860	1.0302	63.631	8.634	660	1.0290	46.865	6.112
12	785	1.0277	53.275	7.308	810	1.0310	61.520	8.529	660	1.0302	48.835	7.142
13	745	1.0268	48.915	6.429	820	1.0308	61.877	6.486	690	1.0306	51.730	6.928
Total	11,725	......	645.925	96.697	10,825	......	772.260	99.721	8,165	......	580.552	80.391
Average	977	1.0241	53.827	8.058	902	1.0293	64.355	8.310	680	1.0291	48.379	6.699
Second subperiod:												
1903—May 14	1,550	1.0202	76.715	13.005	860	1.0308	64.896	7.886	650	1.0309	49.210	6.780
15	810	1.0247	50.829	7.459	810	1.0324	61.298	8.262	540	1.0314	41.540	3.904
16	990	1.0280	67.920	10.740	820	1.0341	68.507	8.241	620	1.0299	45.455	4.991
17	930	1.0266	60.610	8.044	850	1.0308	64.141	5.483	680	1.0320	53.310	5.712
18	835	1.0282	57.690	6.430	775	1.0330	62.659	7.053	600	1.0301	44.247	5.130
19	1,100	1.0228	61.446	10.560	720	1.0335	59.098	6.156	660	1.0299	48.350	6.006
20	920	1.0266	59.960	8.602	740	1.0338	61.274	6.549	700	1.0286	49.049	5.810
21	800	1.0296	58.016	7.600	745	1.0342	62.349	5.103	705	1.0280	48.500	5.126
22	840	1.0288	59.270	8.148	620	1.0344	52.254	4.092	720	1.0281	50.100	5.968
23	820	1.0276	55.445	6.888	800	1.0318	62.328	7.640	735	1.0269	48.440	5.402
24	900	1.0253	55.777	6.795	1,120	1.0265	72.722	13.048	710	1.0285	49.578	6.812
25	1,385	1.0168	57.005	8.726	885	1.0282	61.162	10.001	670	1.0265	43.500	4.824
Total	11,910	......	720.683	102.997	9,745	......	755.688	89.514	7,990	......	571.101	66.465
Average	992	1.0254	60.057	8.583	812	1.0320	62.974	7.460	666	1.0293	47.606	5.539
Third subperiod:												
1903—May 26	......	......	......	......	860	1.0320	67.424	9.589	735	1.0261	47.000	5.990
27	......	......	......	......	615	1.0299	50.549	4.213	700	1.0265	45.451	5.705
28	......	......	......	......	660	1.0330	53.526	4.125	770	1.0270	50.935	6.776
29	......	......	......	......	685	1.0337	56.560	5.343	655	1.0274	43.970	4.978
30	......	......	......	......	900	1.0310	68.355	7.110	890	1.0270	58.870	6.675
31	......	......	......	......	1,300	1.0225	71.669	11.310	675	1.0272	44.980	6.412
June 1	......	......	......	......	840	1.0292	60.094	8.481	745	1.0254	46.360	4.843
2	......	......	......	......	860	1.0303	63.846	7.912	830	1.0241	49.010	5.520
3	......	......	......	......	810	1.0309	61.317	6.480	730	1.0252	45.070	5.001
4	......	......	......	......	815	1.0300	59.903	5.664	810	1.0247	49.030	5.792
5	......	......	......	......	860	1.0283	53.632	6.450	800	1.0245	48.020	5.480
6	......	......	......	......	1,120	1.0266	73.662	9.632	945	1.0204	47.230	7.088
Total	......	......	......	......	10,325	......	740.537	86.312	9,285	......	575.926	70.260
Average	......	......	......	......	860	1.0298	61.711	7.193	774	1.0255	47.994	5.855

TABLE XXXIX.—*Urine determinations for Series V*—Continued.

Period and date.	No. 4.				No. 5.				No. 6.			
	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.	Volume.	Specific gravity.	Total solids (factor 0.245).	Sodium chlorid.
Preservative period—Continued.												
Fourth subperiod:	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*	*cc.*		*Grams.*	*Grams.*
1903—June 7					775	1.0270	51.266	6.743	945	1.0204	47.230	7.088
8					680	1.0303	50.483	5.338	720	1.0230	40.570	11.151
9					750	1.0323	59.355	5.363	710	1.0246	42.792	3.099
10					880	1.0306	65.974	8.052	760	1.0253	47.105	3.572
11					855	1.0310	64.937	7.738	650	1.0244	38.855	3.185
12					910	1.0317	70.680	9.009	860	1.0244	51.465	6.456
13					980	1.0297	71.315	10.388	845	1.0237	49.070	6.802
14					740	1.0303	54.938	6.586	820	1.0245	49.220	6.806
15					820	1.0312	62.681	8.282	805	1.0241	47.530	5.836
16					805	1.0314	61.929	7.648	730	1.0247	44.170	4.599
17					895	1.0294	64.467	8.100	635	1.0259	40.295	4.318
18					950	1.0286	66.567	8.823	725	1.0256	45.475	5.148
19					765	1.0316	59.226	6.770	545	1.0262	34.985	3.624
20					990	1.0270	65.489	8.118	670	1.0276	45.305	4.221
Total					11,795		869.307	106.958	10,420		624.076	75.905
Average					842	1.0302	62.093	7.640	744	1.0246	44.577	5.422
Entire preservative period:												
Average					854	1.0303	62.783	7.651	716	1.0271	47.139	5.879
After period.												
1903—June 21					990	1.0266	64.518	8.267	670	1.0276	45.305	4.221
22					760	1.0278	51.764	6.004	700	1.0260	44.590	4.550
23					960	1.0278	65.386	9.360	690	1.0270	45.645	4.120
24					755	1.0306	56.602	6.606	550	1.0278	37.456	2.282
25					890	1.0294	64.107	7.966	705	1.0266	45.950	4.653
26					740	1.0301	54.568	5.957	580	1.0270	38.370	4.205
27					760	1.0317	59.025	7.106	700	1.0287	49.224	6.020
28					905	1.0296	65.631	9.910	700	1.0295	50.596	7.000
29					925	1.0266	60.282	7.724	590	1.0289	41.775	5.871
Total					7,685		541.883	68.900	5,885		398.911	42.922
Average					854	1.0289	60.209	7.656	654	1.0277	44.323	4.769

TABLE XL.—*Summary of urine determinations for Series V for Nos. 1, 3, and 5.*

[Averages per man per day.]

Period.	Volume.	Specific gravity.	Total solids.	Sodium chlorid.
	cc.		*Grams.*	*Grams.*
Fore period	832	1.0288	58.518	6.200
Preservative period:				
First subperiod	855	1.0278	59.718	7.781
Second subperiod	813	1.0295	58.248	7.176
Third subperiod	833	1.0289	58.494	7.298
Fourth subperiod	825	1.0286	57.164	6.951
Average for entire preservative period	831	1.0287	58.406	7.302
After period	845	1.0286	58.798	7.533

TRACES OF ALBUMIN.

In no instance was the quantity of albumin in the urine sufficient to excite suspicion of a state of disease. There were, however, in some cases minute traces of albuminous particles, responding to the ordinary reactions, which should be noted. For convenience of illustration the presence of these minute quantities is represented graphically.

In the first series the tests for these traces of albumin were not regularly made; therefore the first series of observations is excluded from the comparison. In the succeeding series a comparison has been made of all the members of each series who completed the entire course of observation. Those who went through partially or were incapacitated by illness or otherwise from completing the course are excluded. A graphic representation is made of these traces of albumin, based upon the strength of the reaction ascertained, for in no case was there a quantity sufficient to be measured with any accuracy quantitatively. The amount of albumin present is expressed according to the following scale: *a*, Very minute trace; *b*, minute trace; *c*, trace; *d*, strong trace; *e*, small quantity; *f*, considerable quantity. (See fig. 8.) The data represent the mean for all men of each series completing the entire course, namely, one in Series II, three in Series III, two in Series IV, and four in Series V. The lines at the bottom of the chart represent the mean results of Series II, III, IV, and V combined. The dotted line in each case shows the daily variations, and the continuous line shows the mean quantity for the whole of the period.

In Series II a slight increase in the quantity of the albumin in the urine under the influence of the preservative is shown, and this increase is continued in a marked manner in the after period until near its close, when the quantity returns again to the normal or even below. In Series III there is likewise a marked increase in the quantity of albumin in the urine during the administration of the preservative, but a decrease during the after period, which brings the amount down almost to the normal for the fore period. The same phenomena are shown in Series IV, but not to the same extent, the quantity of albu-

min remaining almost the same throughout the three periods, being, however, slightly greater in the preservative period than in the fore and after periods. In the fifth series there is also a marked increase in the quantity of albumin during the preservative period and a very slight increase over this quantity in the after period. The broken line in this series represents periods of five days, this condensation being necessary in order to bring it into direct comparison with other periods, which extend over a much shorter time.

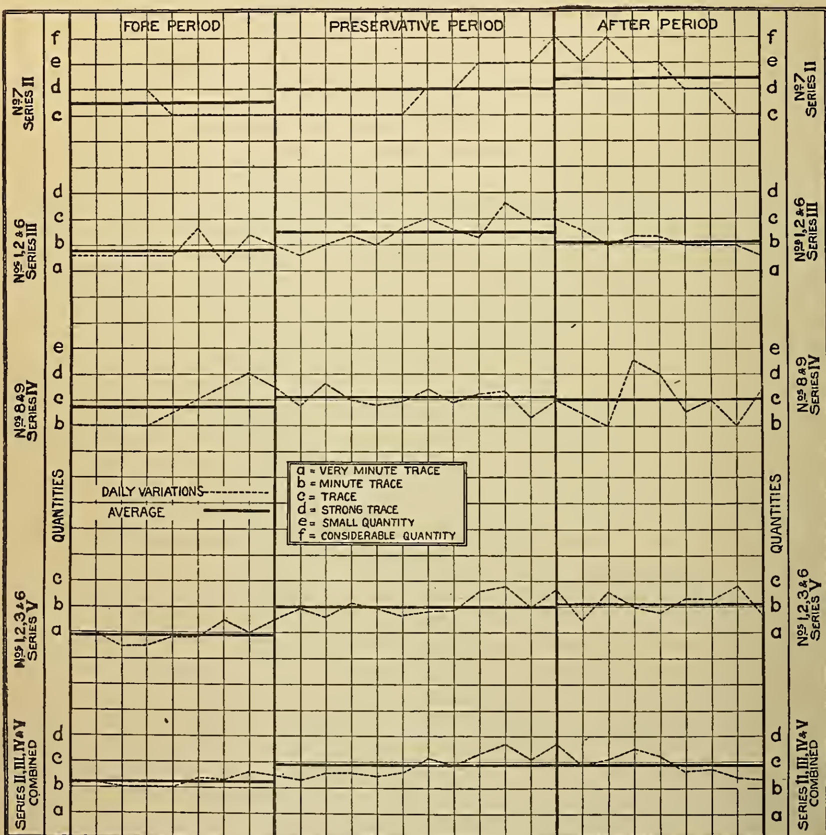

FIG. 8.—Albumin in urine.

When all these expressions are combined into one it is shown that the general influence of the preservative was to increase the traces of albumin in the urine, and this increase was maintained in the same magnitude during the after period. These data are highly interesting, showing, as they do with reasonable certainty, a very slight tendency on the part of boric acid and borax to increase the traces of albumin in the urine.

MICROSCOPICAL EXAMINATIONS.

Microscopical examinations of the urine were made for the following substances:

(1) Uric acid crystals.
(2) Urates.
(3) Oxalate of lime.
(4) Phosphates:
  (*a*) Crystalline phosphates.
  (*b*) Amorphous phosphates.
(5) Epithelium cells of all kinds.
(6) Leucocytes.
(7) Red blood cells.
(8) Casts:
  (*a*) Hyaline.
  (*b*) Finely granular.
  (*c*) Coarsely granular.
  (*d*) Epithelial.
  (*e*) Other forms.
(9) Mucous cylindroids.
(10) Mucous strands.

The data relative to these examinations are contained in the tabular statement given herewith. (Tables XLI–XLIV, pp. 207–211). The relative abundance of the various bodies is represented as follows: None, 0; very few, 1; few, 2; fairly abundant, 3; abundant, 4; extremely abundant, 5.

SERIES II.

Uric acid crystals.—This examination was not instituted until after the close of the first series, and the first test was made during the second series, three days after the close of the fore period. The second examination was made on February 20, near the close of the supplemental preservative period. In no instance were uric acid crystals found.

Urates.—A similar examination was made for urates, with the same result.

Oxalate of lime.—The urine was also examined at the same time for crystals of oxalate of lime. In the urine of No. 8 a considerable number of crystals was found during both periods. In the case of No. 9 a very few crystals were found during the second period. In the case of No. 11 crystals of oxalate of lime occurred during the first period, but none during the second, and the same is true in the case of No. 12, only the crystals were less abundant.

Crystalline phosphates.—No crystalline phosphates were found in any of the samples at either period of examination.

Amorphous phosphates.—Amorphous phosphates were found to be abundant in the urine of No. 8 during the second period of observation, but in no other case did they occur.

Epithelium cells.—These bodies were found in all samples during both periods of examination. They were more abundant during the second period than the first.

Leucocytes.—Leucocytes were found in all samples during both periods. There is scarcely any difference in the relative abundance of these bodies during the two periods of observation except in the case of No. 8, where there was an increase in the number during the second period.

Red blood cells.—Red blood cells were absent in all cases, except in the case of No. 8 during the second period, when some of these bodies were found.

Hyaline casts.—Hyaline casts were found in two instances during the first examination, namely, in the cases of Nos. 10 and 12, and in all of the samples during the second period of observation, being fairly abundant in the case of No. 7. In the case of No. 10 there was a diminution in the number found as compared with the first period.

Finely granular casts.—These were present in two instances in the first examination, namely, Nos. 10 and 12, and also in two instances during the second period, namely, Nos. 9 and 12, the number increasing in the case of No. 12.

Coarsely granular casts.—These were found in only one instance in the first period, namely, that of No. 12, and during the second period of examination once in the case of No. 9.

Epithelial casts.—Epithelial casts were entirely absent in all cases during the first examination and occurred only in the case of No. 12 during the second.

Other forms of casts.—Forms of casts which appeared to be hyaline pus casts were found in the case of No. 12 during the first examination, but had disappeared at the time of the second examination.

Mucous cylindroids.—Mucous cylindroids were present in all instances during both the first and second examinations. They were somewhat more abundant during the second examination in the case of No. 8 and less abundant in the case of No. 10. In the other cases the relative abundance during the two periods was unchanged.

Mucous strands.—These bodies were present in all cases during both examinations. During the first examination they were abundant in the case of No. 7 and extremely abundant in the case of No. 9. During the second examination they were extremely abundant in the cases of Nos. 7 and 8. The strands increased in abundance at the period of the second examination in the cases of Nos. 7, 8, 10, and 12. They diminished in abundance in the second examination in the case of No. 9 and remained unchanged in the case of No. 11.

The above data show that very little change in the relative abundance of the various bodies mentioned occurred between the time of the first and second examinations. There is shown, however, a slight tend-

ency to increase in the number of these bodies at the period of the second examination. Disturbances which took place in the health of the members of the series, due to grippe and other diseases, render any discussion of this relative abundance in connection with the administration of the preservative impracticable.

SERIES III.

Four examinations were made for these bodies in the urine during the third series. The first examination was made on February 19 and 20, at the beginning of the fore period; the second examination was made on March 12, at the end of the preservative period; the third examination was made on March 17, during the after period, and the final examination was made on March 20, at the end of the after period. (See Table XLII, p. 208.)

Uric-acid crystals.—During the fore period no uric-acid crystals are found in any instance. The same is true of the preservative period. In the after period uric-acid crystals occur in the cases of Nos. 1 and 2, and in the case of No. 2 these crystals are fairly abundant at the close of the after period.

Urates.—No urates are found in any of the samples during any of the periods.

Oxalate of lime.—Crystals of oxalate of lime are fairly abundant in the case of No. 3 in the fore period, diminishing slightly in the preservative period. They are again fairly abundant in the first examination of the after period and extremely abundant in the final examination of the after period. In the case of No. 6 no crystals of oxalate of lime are found in the fore period. They appear in the preservative period, there are a few in the first examination of the after period, and an abundance in the second examination of the after period. In the case of No. 4 oxalate of lime crystals are found only during the first examination of the after period. In the case of No. 5 these bodies are found only in the second examination of the after period. In the cases of Nos. 1 and 2 oxalate of lime crystals are not found at any period.

Crystalline phosphates.—No crystalline phosphates are found in any instance except in the case of No. 5, where a very few occur during the last examination of the after period.

Epithelium cells.—These are found throughout the examinations in all cases. In the fore period they are fairly abundant in the case of No. 6. In the preservative period they become abundant in the case of No. 2 and fairly abundant in the case of No. 6. In the first examination of the after period they are abundant in the cases of Nos. 2 and 6. In the second examination of the after period they are fairly abundant in the cases of Nos. 2 and 6. No examination was made in the case of No. 4 during the preservative period.

Leucocytes.—These bodies appear in all instances at every examina-

tion. They are fairly abundant in the fore period in the case of No. 6 and also in the last examination of the after period. In other cases they occur in small numbers or in the quantity represented by 2. No examination was made for leucocytes in the case of No. 4 during the preservative period.

Red blood cells.—These are absent in all cases during all the periods.

Hyaline casts.—These are present in all instances during the whole examination except in the case of No. 1, where none is present at the examination of the preservative period and the first examination of the after period. The casts are fairly abundant in the case of No. 5 at the first examination of the after period and in the case of No. 6 at the last examination of the after period. In most instances they are either few or fairly abundant, as indicated by the figures in the tables.

Finely granular casts.—These are present in all instances except in the case of No. 1 in the preservative period and the first examination of the after period, in the case of No. 2 during the fore period and last examination of the after period, and in the case of No. 4 during the fore period. No examination was made in the case of No. 4 for the preservative period. These casts are fairly abundant in the case of No. 3 during the first and second examinations, in the case of No. 5 during the third examination, and in the case of No. 6 during the fourth examination, and abundant in the case of No. 3 at the fourth examination.

Coarsely granular casts.—These are found to be present in about half the samples examined. They are fairly abundant in the case of No. 3 at the first and fourth examinations and in No. 6 at the fourth examination.

Epithelial casts.—These are found only in the case of No. 3 at the first and fourth examinations.

Other forms of casts.—None of these is found in any instance.

Mucous cylindroids.—These are present in nearly all cases. They are fairly abundant in the case of No. 1 at the first and fourth examinations; in the case of No. 2 in the first, third, and fourth examinations, and abundant in the second examination and in the case of No. 6 at the second and third examinations. They are extremely abundant in the case of No. 6 at the first and fourth examinations. They are not found in the case of No. 1 at the second examination or in the case of No. 5 at the third. No test was made of the sample from No. 4 at the second examination.

Mucous strands.—These are present in all cases. They are fairly abundant in the case of No. 1 and No. 3 at the third examination. They are abundant in the case of No. 1 at the second and fourth; in the case of No. 2 at the first, second, and fourth; in the case of No. 3 at the first and second; in the case of No. 4 at the first, third, and fourth; in the case of No. 5 at the second, third, and fourth, and in the case of No. 6 at the second and third examinations. They are extremely

abundant in the case of No. 1 at the first, No. 5 at the first, and No. 6 at the first and fourth examinations.

A study of the data above given, as a whole, fails to reveal any distinct connection between the relative abundance of the bodies looked for and the administration of the preservative.

SERIES IV.

Five examinations were made during the fourth series—one during the fore period, three during the preservative period, and one for the after period. (See Table XLIII, p. 209.)

Uric-acid crystals.—No crystals of uric acid are found in any instance in the examinations of the urine during the fourth series.

Urates.—No urates are found in any of the examinations of the fourth series.

Oxalate of lime.—Crystals of oxalate of lime are found in numerous instances. They are fairly abundant in the cases of Nos. 8, 11, and 12. They are abundant in the first examination of No. 8 and the last examination of No. 11. They occur with more or less irregularity in abundance in the other instances in so far as the examinations were completed. In many cases during this series the examinations were not complete because of illness or other irregularities of the subjects. Where examinations were not made the fact is indicated in the table by a blank.

Crystalline phosphates.—These are found only in two instances, and then at the last examination in the cases of Nos. 8 and 9.

Epithelium cells.—These are found in all cases, a few in most instances, fairly abundant in one instance in No. 9 and in one instance in No. 12, and abundant in the first examination of No. 12.

Leucocytes.—These are found in all instances, fairly abundant in three cases in No. 8 and in two cases in No. 12, abundant in the case of the first and last examinations of No. 12, and extremely abundant in the two examinations made of No. 7.

Red blood cells.—These bodies are not found in any instance.

Hyaline casts.—These bodies are found in most instances, but are fairly abundant only in the last examination of No. 10.

Finely granular casts.—These also are found in most instances, but are not quite so constant as in the preceding case. They are fairly abundant only in one instance, namely, the next to the last examination of No. 8.

Coarsely granular casts.—These are found in about one-third of the samples examined. They are abundant in the next to the last examination of No. 8, while in all other cases where they occur they are very few in number.

Epithelial casts.—These are not found in any instance.

Other forms of casts.—No other forms of casts are found in any instance.

Mucous cylindroids.—These are found in every instance, and they are fairly abundant in the first examination of No. 8, in the fourth examination of No. 9, in the first, second, and third examinations of No. 10, in the fourth examination of No. 11, and in the third examination of No. 12. They are abundant in the second examination of No. 7, in the second and fourth examinations of No. 8, in the first and second examinations of No. 9, and in the fifth examination of No. 12.

Mucous strands.—These are found also in every instance. They are fairly abundant in the second and third examinations of No. 10, in the fourth examination of No. 11, and in the second and fourth examinations of No. 12. They are abundant in the first and second examinations of No. 7, in the first, second, and fourth examinations of No. 8, in the first and fourth examinations of No. 9, and in the first and third examinations of No. 12. They are extremely abundant in the second examination of No. 9 and in the fifth examination of No. 12.

A general summary of the above data, while giving interesting information in regard to the occurrence of these microscopical bodies in the urine, fails to reveal any definite connection between the abundance of the occurrence and the influence of the preservative administered.

Series V.

Ten examinations were made for the bodies under discussion during the fifth series—one during the fore period, eight during the preservative period, and one for the after period. (See Table XLIV, p. 210.)

Uric-acid crystals.—No crystals of uric acid are found in the cases of Nos. 4 and 6. No. 4, however, left the city before the end of the period. The crystals are found only once in the cases of No. 3 and No. 5, and then only a very few are present. They occur quite frequently in the case of No. 1 and at the last examination are abundant. They also appear quite frequently in the case of No. 2 during the preservative period, but at no other time. These data show a slight tendency on the part of the preservative to increase the number of uric-acid crystals, although the greatest number was found in the case of No. 1 in the after period.

Urates.—Urates are found only in the case of No. 2, and that about the middle of the preservative period. They are fairly abundant at that time, but rapidly disappear. There may possibly be some connection between their appearance and the administration of the preservative, but it is not very strongly brought out.

Oxalate of lime.—Oxalate of lime crystals are found in every sample except one in the cases of Nos. 1 and 3. They become abundant in the case of No. 3 toward the end of the preservative period and during the after period. They occur irregularly in the case of No. 1. The crystals are found at first in the case of No. 2, but disappear after

the first examination of the preservative period. In the case of No. 5 they occur in the fore period, disappear in the first examination of the preservative period, reappear in the third and fourth examinations, and then disappear until the final examination. They are fairly abundant in the case of No. 6 in the fore period, disappear at the second examination of the preservative period, reappear at the third and fourth examinations of the preservative period, and then disappear until the after period. The influence of the preservative, if any, in this case seems to be irregular. It appears to have some influence in increasing the oxalate of lime crystals in the case of No. 3 and decreasing them in the case of No. 2, while its influence is irregular in the other instances. These data do not afford any basis for a definite conclusion.

Crystalline phosphates.—No phosphates are found in the cases of Nos. 1 and 6. In the case of No. 2 they are found in the fore period and after period, but do not occur in the preservative period. In the case of No. 3 they are found irregularly in the fore and preservative periods. They also occur irregularly in the case of No. 4. In the case of No. 5 the preservative seems to have had an influence in producing crystalline phosphates, since the only occurrence thereof is in the preservative period, and at one time they occur in abundance. They, however, immediately disappear and are not found again. The data, therefore, are not conclusive in this case of any definite action of the preservative in influencing the number of crystalline phosphates.

Amorphous phosphates.—These are not found at all in the cases of Nos. 1, 2, 4, 5, and 6. They occur in abundance in the fore period in the case of No. 3, in very great abundance in the first preservative period, disappear for a time, and then recur in one instance, after which they are not found again. The preservative appears to have had an influence in diminishing the amount of amorphous phosphates appearing in the case of No. 3.

Epithelium cells.—These appear regularly in all cases. In the case of No. 1 they are more abundant during the preservative period. In the case of No. 2 there seems to be no definite relation between the administration of the preservative and the variations in the number of epithelium cells, and the same is true of Nos. 3, 4, 5, and 6. The data therefore show in the case of No. 1 only, a definite influence on the part of the preservative, and this influence might perhaps be attributed to some other cause.

Leucocytes.—These bodies are found in all cases. In the cases of Nos. 1, 2, 3, 4, and 6 they appear to be more numerous during the preservative period, while in the case of No. 5 there is no definite basis for drawing any conclusion. In general, the data seem to show a slight influence of the preservative in increasing the number of leucocytes.

Red blood cells.—Red blood cells are found in only two instances, in neither case abundant.

Hyaline casts.—These bodies are found in nearly every instance. In the cases of Nos. 1 and 2 they appear to be more frequent during the preservative period. In the case of No. 3 there is no definite relation evident, and the same is true of No. 5. In the case of No. 6 there seems to be a diminution in the number of hyaline casts during the latter part of the preservative period and a considerable increase during the after period. In this case also the data are not conclusive. The preservative appears to increase the number of casts in some instances and diminish them in others.

Finely granular casts.—These bodies are also found in most cases. In the case of No. 1 there is an apparent increase in the number during the preservative period. This is also true of No. 2, although in the latter part of the preservative period these casts disappear altogether. In the case of No. 3 the casts do not appear to be influenced by the administration of the preservative, and the same is true of No. 5, while in the case of No. 6 there is apparently a larger number during the fore and after periods than during the preservative period. Here again the data are not conclusive. Apparently the preservative tends to increase the number of casts in some instances and diminish them in others or to have no influence at all.

Coarsely granular casts.—These are found in the majority of samples under examination. In the case of No. 1 the larger number was found during the administration of the preservative. This is true also in a marked degree in the case of No. 2. In the case of No. 3 there seems to be no effect produced by the preservative on the number of casts. In the case of No. 5 none is found during the fore and after periods, and in three instances during the preservative period none is found. In the case of No. 6 none is found during the fore period; casts are found five times out of eight during the preservative period, and they are also found in the after period. Here again the data are not conclusive, the preservative appearing to increase the number of casts in some cases and to have no effect whatever or a tendency to diminish the number in other cases.

Epithelial casts.—These are not found in any case except that of No. 6, where they are found once at the beginning of the preservative period and once in the after period.

Other forms of casts.—No other forms of casts than those above mentioned are found, except in one instance in the after period in the case of No. 6.

Mucous cylindroids.—These are found in all cases, but the inspection of the data does not reveal any apparent effect of the preservative in either increasing or decreasing the number present. They are abundant in four examinations of No. 1, one of No. 4, five of No. 5, and two of No. 6. They are extremely abundant in three of the examinations of No. 6 and one of No. 5. These variations in numbers in the case of No. 6 may seem to be connected with the use of the preservative, but the relation is not distinctly marked.

Mucous strands.—These are found also in all cases. They are especially abundant in the case of Nos. 1, 5, and 6. Their relative abundance does not appear to be influenced in any way by the administration of the preservative.

SUMMARY.

Reviewing the data as a whole in regard to the appearance of these microscopical bodies in the urine, the facts which appear prominently are the great variations in the number and character of these microchemical bodies. They occur constantly in some cases in very much greater abundance than in others. There are a few cases—in fact, quite a number—where the relative abundance of these bodies seems to be increased during the administration of the preservative. There is a smaller number of cases in which the contrary fact occurs. In the greater number of cases, however, the administration of the preservative appears to have had no influence upon the relative abundance of these bodies. The data therefore, as a whole, can not be regarded as conclusive respecting the influence of the preservative upon the number of microchemical bodies occurring in the urine.

TABLE XLI.—*Microscopical examinations of the urine for Series II.*

[None, 0; very few, 1; few, 2; fairly abundant, 3; abundant, 4; extremely abundant, 5.]

Data.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.	No. 12.
Uric-acid crystals:						
Jan. 30	0	0	0	0	0	0
Feb. 19–20	0	0	0	0	0	0
Urates:						
Jan. 30	0	0	0	0	0	0
Feb. 19–20	0	0	0	0	0	0
Oxalate of lime crystals:						
Jan. 30	0	4	0	0	2	1
Feb. 19–20	0	3	1	0	0	0
Crystalline phosphates:						
Jan. 30	0	0	0	0	0	0
Feb. 19–20	0	0	0	0	0	0
Amorphous phosphates:						
Jan. 30	0	0	0	0	0	0
Feb. 19–20	0	4	0	0	0	0
Epithelium cells (round, flat, and caudate):						
Jan. 30	2	2	2	2	1	2
Feb. 19–20	a 3	3	2	2	1	a 3
Leucocytes:						
Jan. 30	3	2	2	2	1	2
Feb. 19–20	3	3	2	2	1	2
Red blood cells:						
Jan. 30	0	0	0	0	0	0
Feb. 19–20	0	1	0	0	0	0
Hyaline casts:						
Jan. 30	0	0	0	2	0	2
Feb. 19–20	3	1	1	1	1	2
Finely granular casts:						
Jan. 30	0	0	0	1	0	1
Feb. 19–20	0	0	1	0	0	2
Coarsely granular casts:						
Jan. 30	0	0	0	0	0	1
Feb. 19–20	0	0	1	0	0	0
Epithelial casts:						
Jan. 30	0	0	0	0	0	0
Feb. 19–20	0	0	0	0	0	1
Other forms of casts:						
Jan. 30	0	0	0	0	0	b 2
Feb. 19–20	0	0	0	0	0	0
Mucous cylindroids:						
Jan. 30	2	2	2	2	1	2
Feb. 19–20	2	3	2	1	1	2
Mucous strands:						
Jan. 30	4	2	5	1	1	2
Feb. 19–20	5	5	2	3	1	3

a Some in sheets.

b Hyaline pus casts.

TABLE XLII.—*Microscopical examinations of the urine for Series III.*

[None, 0; very few, 1; few, 2; fairly abundant, 3; abundant, 4; extremely abundant, 5.]

Data.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Uric-acid crystals:						
Feb. 19–20	0	0	0	0	0	0
Mar. 12	0	0	0	....	0	0
17	1	1	0	0	0	0
20	1	3	0	0	0	0
Urates:						
Feb. 19–20	0	0	0	0	0	0
Mar. 12	0	0	0	....	0	0
17	0	0	0	0	0	0
20	0	0	0	0	0	0
Oxalate of lime crystals:						
Feb. 19–20	0	0	3	0	0	0
Mar. 12	0	0	2	....	0	1
17	0	0	3	1	0	2
20	0	0	5	0	1	4
Crystalline phosphates:						
Feb. 19–20	0	0	0	0	0	0
Mar. 12	0	0	0	0	0	0
17	0	0	0	0	0	0
20	0	0	0	0	1	0
Epithelium cells (round, flat, and caudate):						
Feb. 19–20	1	2	2	2	1	*a* 3
Mar. 12	1	*a* 3	2	....	2	*a* 4
17	1	4	1	*a* 2	2	*a* 4
20	2	3	2	2	1	*a* 3
Leucocytes:						
Feb. 19–20	2	2	2	2	1	*b* 3
Mar. 12	2	2	2	....	1	2
17	1	2	1	1	2	2
20	2	2	2	2	1	*a* 3
Red blood cells:						
Feb. 19–20	0	0	0	0	0	0
Mar. 12	0	0	0	0	0	0
17	0	0	0	....	0	0
20	0	0	0	0	0	0
Hyaline casts:						
Feb. 19–20	2	2	2	2	1	2
Mar. 12	0	2	2	....	2	2
17	0	2	2	2	3	2
20	2	1	2	2	1	3
Finely granular casts:						
Feb. 19–20	2	0	3	0	1	2
Mar. 12	0	1	3	....	2	2
17	0	1	2	1	3	2
20	1	0	4	3	1	3
Coarsely granular casts:						
Feb. 19–20	0	0	3	0	1	2
Mar. 12	0	1	2	....	0	0
17	0	0	0	0	2	0
20	0	0	3	2	0	3
Epithelial casts:						
Feb. 19–20	0	0	1	0	0	0
Mar. 12	0	0	0	....	0	0
17	0	0	0	0	0	0
20	0	0	1	0	0	0
Other forms of casts:						
Feb. 19–20	0	0	0	0	0	0
Mar. 12	0	0	0	....	0	0
17	0	0	0	0	0	0
20	0	0	0	0	0	0
Mucous cylindroids:						
Feb. 19–20	3	3	2	2	1	5
Mar. 12	0	4	2	....	2	4
17	2	3	2	2	0	4
20	3	3	2	2	1	5
Mucous strands:						
Feb. 19–20	5	4	4	4	5	5
Mar. 12	4	4	4	....	4	4
17	3	2	3	4	4	4
20	4	4	2	4	4	5

a Some in sheets. *b* Some in large clumps.

TABLE XLIII.—*Microscopical examinations of the urine for Series IV.*

[None, 0; very few, 1; few, 2; fairly abundant, 3; abundant, 4; extremely abundant, 5.]

Data.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.	No. 12.
Uric-acid crystals:						
Mar. 21	0	0	0	0	0	0
28	0	0	0	0	0	0
Apr. 4	....	....	....	0	....	0
7	....	0	0	0	0	0
18	....	0	0	0	0	0
Urates:						
Mar. 21	0	0	0	0	0	0
28	0	0	0	0	0	0
Apr. 4	....	....	....	0	....	0
7	....	0	0	0	0	0
18	....	0	0	0	0	0
Oxalate of lime crystals:						
Mar. 21	2	4	2	1	1	1
28	2	3	2	0	3	0
Apr. 4	....	....	....	1	....	3
7	....	3	1	1	2	1
18	....	3	2	0	4	1
Crystalline phosphates:						
Mar. 21	0	0	0	0	0	0
28	0	0	0	0	0	0
Apr. 4	....	....	....	0	....	....
7	....	0	0	0	0	0
18	....	2	1	0	0	0
Epithelium cells (round, flat, and caudate):						
Mar. 21	[a]2	2	2	1	1	4
28	2	2	3	2	1	2
Apr. 4	....	....	....	2	....	[b]2
7	....	2	2	[b]2	2	[b]3
18	....	2	2	2	2	[b]2
Leucocytes:						
Mar. 21	5	3	2	2	1	4
28	5	3	2	2	1	2
Apr. 4	....	....	....	3	....	3
7	....	3	1	2	2	3
18	....	[b]2	1	2	1	4
Red blood cells:						
Mar. 21	0	0	0	0	0	0
28	0	0	0	0	0	0
Apr. 4	....	....	....	0	0	0
7	....	0	0	0	0	0
18	....	0	0	0	0	0
Hyaline casts:						
Mar. 21	0	2	1	1	1	2
28	1	1	0	1	1	2
Apr. 4	....	....	....	1	....	2
7	....	2	1	2	2	1
18	....	1	1	3	2	2
Finely granular casts:						
Mar. 21	0	0	1	2	1	1
28	0	0	0	1	0	1
Apr. 4	....	....	....	1	....	2
7	....	3	1	1	1	1
18	....	1	1	2	1	2
Coarsely granular casts:						
Mar. 21	0	0	0	1	0	0
28	0	1	0	1	0	0
Apr. 4	....	....	....	0	....	1
7	....	4	0	1	0	0
18	....	0	1	1	0	1
Epithelial casts:						
Mar. 21	0	0	0	0	0	0
28	0	0	0	0	0	0
Apr. 4	....	....	....	0	....	0
7	....	0	0	0	0	0
18	....	0	0	0	0	0
Other forms of casts:						
Mar. 21	0	0	0	0	0	0
28	0	0	0	0	0	0
Apr. 4	....	....	....	0	....	0
7	....	0	0	0	0	0
18	....	0	0	0	0	0
Mucous cylindroids:						
Mar. 21	2	3	4	3	1	2
28	4	4	4	3	2	2
Apr. 4	....	....	....	3	....	3
7	....	4	3	2	3	2
18	....	2	2	2	2	4

[a] A few in sheets.

[b] Some in shreds.

TABLE XLIII—*Microscopical examinations of the urine for Series IV*—Continued.

Data.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.	No. 12.
Mucous strands:						
Mar. 21	4	4	4	2	1	4
28	4	4	5	3	1	3
Apr. 4	....	....	....	3	....	4
7	....	4	4	2	3	3
18	....	2	2	2	2	5

TABLE XLIV.—*Microscopical examinations of the urine for Series V.*

[None, 0; very few, 1; few, 2; fairly abundant, 3; abundant, 4; extremely abundant, 5.]

Data.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Uric-acid crystals:						
Apr. 25–27	0	0	0	0	0	0
May 2	1	2	0	0	0	0
9	3	2	0	0	0	0
16–18	2	1	0	0	0	0
23–25	0	1	0	0	0	0
29	1	2	1	....	0	0
June 6	0	1	0	....	1	0
13	0	0	0	....	0	0
20	1	0	0	....	0	0
27–29	4	0	0	....	0	0
Urates:						
Apr. 25–27	0	0	0	0	0	0
May 2	0	0	0	0	0	0
9	0	0	0	0	0	0
16	0	0	0	0	0	0
23–25	0	3	0	0	0	0
29	0	1	0	....	0	0
June 6	0	0	0	....	0	0
13	0	0	0	....	0	0
20	0	0	0	....	0	0
27–29	0	0	0	....	0	0
Oxalate of lime crystals:						
Apr. 25–27	2	1	2	1	1	3
May 2	1	1	2	1	0	2
9	1	0	0	3	2	0
16–18	1	0	1	0	1	1
23	0	0	3	1	0	1
29	1	0	4	....	0	0
June 6	2	0	3	....	0	0
13	2	0	2	....	0	0
20	1	0	3	....	0	0
27	1	0	3	....	2	2
Crystalline phosphates:						
Apr. 23, 25, 27	0	1	1	1	0	0
May 2	0	0	2	1	2	0
9	0	0	0	0	0	0
16–18	0	0	1	0	4	0
23–25	0	0	0	1	0	0
29	0	0	0	....	0	0
June 6	0	0	0	....	0	0
13	0	0	2	....	0	0
20	0	0	0	....	0	0
27–29	0	1	0	....	0	0
Amorphous phosphates:						
Apr. 23–27	0	0	4	0	0	0
May 2	0	0	5	0	0	0
9	0	0	0	0	0	0
16–18	0	0	0	0	0	0
23–25	0	0	2	0	0	0
29	0	0	0	....	0	0
June 6	0	0	0	....	0	0
13	0	0	0	....	0	0
20	0	0	0	....	0	0
27–29	0	0	0	....	0	0
Epithelium cells (round, flat, and caudate):						
Apr. 23–25	1	2	2	[a]2	2	2
May 2	1	2	2	[a]2	2	2
9	1	3	[a]3	2	2	2
16–18	1	2	2	2	2	2
23–25	2	3	2	[a]3	2	3
29	[a]3	2	1	....	2	2

[a] Some in sheets.

TABLE XLIV—*Microscopical examinations of the urine for Series V*—Continued.

Data.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Epithelium cells—Continued,						
June 6	2	a2	2	....	3	2
13	1	a2	2	....	2	a3
20	1	a3	2	....	2	3
27–29	1	2	2	....	2	2
Leucocytes:						
Apr. 23–25	1	2	1	1	1	2
May 2	1	1	1	1	2	2
9	1	2	3	1	1	2
16	2	2	2	2	2	2
23–25	a3	3	2	2	2	a3
29	3	a2	1	....	2	3
June 6	a3	2	3	....	2	3
13	2	a2	2	....	2	a2
20	a2	2	3	....	3	2
27	2	1	1	....	a2	a2
Red blood cells:						
Apr. 23–27	0	0	0	0	0	0
May 2	0	0	0	0	0	0
9	0	0	0	0	0	0
16	1	0	0	0	0	0
23	0	0	0	0	0	0
29	0	0	0	....	0	0
June 6	0	0	0	....	0	0
13	0	0	2	....	0	0
20	0	0	0	....	0	0
27–29	0	0	0	....	0	0
Hyaline casts:						
Apr. 23, 25, 27	1	0	2	2	2	2
May 2, 9, 11	2	0	1	1	1	2
9	1	1	2	2	1	2
16	3	3	3	2	1	2
23	3	2	2	1	1	3
29	2	2	3	....	1	1
June 6	2	2	2	....	2	1
13	2	1	1	....	1	1
20	3	0	2	....	1	2
27	2	1	2	....	0	3
Finely granular casts:						
Apr. 23–27	1	0	2	1	1	2
May 2	1	0	1	1	1	1
9	1	1	2	1	0	1
16	2	3	2	1	1	1
23	3	1	1	0	1	2
29	2	1	2	....	0	0
June 6	2	1	2	....	1	0
13	1	0	0	....	1	1
20	2	0	2	....	1	1
27	1	1	1	....	0	2
Coarsely granular casts:						
Apr. 23–27	0	0	2	1	0	0
May 2	0	0	1	1	1	1
9	0	1	0	0	0	0
16	2	3	2	1	1	1
23	3	1	1	0	1	2
29	1	1	1	....	0	0
June 6	2	0	1	....	1	0
13	1	0	1	....	1	1
20	2	0	1	....	0	1
27–29	1	0	0	....	0	1
Epithelial casts:						
Apr. 23, 25, 27	0	0	0	0	0	0
May 2	0	0	0	0	0	1
9	0	0	0	0	0	0
16	0	0	0	0	0	0
23	0	0	0	0	0	0
29	0	0	0	....	0	0
June 6	0	0	0	....	0	0
13	0	0	0	....	0	0
20	0	0	0	....	0	0
27	0	0	0	....	0	1
Other forms of casts.						
Apr. 23	0	0	0	0	0	0
May 2	0	0	0	0	0	0
9	0	0	0	0	0	0
16	0	0	0	0	0	0
23	0	0	0	0	0	0
29	0	0	0	....	0	0
June 6	0	0	0	....	0	0
13	0	0	0	....	0	0
20	0	0	0	....	0	0
27	0	0	0	....	0	2

a Some in sheets.

TABLE XLIV—*Microscopical examinations of the urine for Series V*—Continued.

Date.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Mucous cylindroids:						
Apr. 23	3	3	2	4	4	2
May 2	4	3	1	1	5	5
9	4	3	1	1	4	5
16	4	3	2	1	4	5
23	3	2	2	2	4	4
29	4	2	2	....	4	3
June 6	3	2	1	....	2	3
13	3	3	2	....	3	3
20	2	2	1	....	2	2
27	2	1	1	....	2	4
Mucous strands:						
Apr. 23	4	3	1	5	4	5
May 2	5	2	1	2	5	5
9	4	3	1	1	4	5
16	4	3	2	2	4	5
23	5	2	2	4	5	4
29	5	2	2	....	5	4
June 6	4	2	1	....	5	4
13	3	3	2	....	4	4
20	3	2	1	....	3	4
27	4	2	1	....	2	5

METABOLIC PROCESSES.

NITROGEN.

BALANCE.

As has already been intimated, the nitrogen balance represents the difference between the total quantity of nitrogen in the foods and the quantity secured in the feces and urine. In a perfectly normal state, where the body is neither gaining nor losing in weight, this balance is necessarily positive, because all the nitrogen contained in the food is not found in the feces and urine. In abnormal states the balance may become a negative number when more nitrogen is excreted by far than should be, or it may become a greater positive number when less nitrogen is excreted than should be. The tables illustrative of the nitrogen balance are made out in full, containing the daily balances. (See Tables XLV–LV, pp. 260–306.) The great variations in the daily balance are largely due to the fact that the quantities of urine and feces vary largely from day to day, while the quantity of nitrogen entering into the food remains practically constant. Thus there may be very great variations in the daily balance, while the balance for the period is always approximately correct, especially if the period extends over a considerable number of days.

SERIES I.

The largest deficiencies of nitrogen in the excreta are naturally found in those cases where the percentage of excretion is low, and vice versa. In the individual cases of Series I we find that the nitrogen balance is a negative number in every period with No. 6, except during the second preservative subperiod and the after period, where the

balance becomes a positive number. In the cases of the other members of the table, during the fore period the nitrogen balance is positive. During the first preservative subperiod it is negative in the case of No. 4. In the third subperiod the balance is positive in each case except No. 6, while in the after period the balance is positive in all cases.

The summary of the entire preservative period, namely, December 22 to January 3, shows a positive balance in all cases excepting No. 6.

Comparing now the daily average of the whole class for the different periods, we find that during the fore period the daily nitrogen balance is 2.12 grams, for the first preservative subperiod 0.83, for the second subperiod 2.24, for the third subperiod 1.20, for the first, second, and third subperiods together 1.40, and for the after period 1.73. These data show a tendency in this series toward an increase in the amount of nitrogen excreted during the administration of the preservative.

SERIES II.

During this series, on account of illness, the data are not complete for four members of the table, namely, Nos. 8, 9, 11, and 12. In the case of the two remaining members there were periods of temporary illness (grippe), which caused the loss of the data for certain days. As a whole, therefore, this period of observation may be considered as quite unsatisfactory.

In the fore period, extending from January 19 to 27, inclusive, in the case of No. 7 the average daily nitrogen balance was 0.11 gram, in the case of No. 10 it was 3.66, and for No. 12 it was 5.39. No. 12 did not finish the period with the preservative and is therefore excluded from the average. The mean daily average of Nos. 7 and 10 is 1.89.

In the period from January 28 to 31, inclusive, during which 1 gram of boric acid was administered daily, the average daily nitrogen balance increases in the case of No. 7 and remains the same in the case of No. 10, while the mean daily balance for the two is 1.63.

In the second preservative subperiod, extending from February 1 to February 4, inclusive, in which 2 grams of boric acid were administered daily, the nitrogen balance of No. 7 increases as compared with the fore period, that of No. 10 decreases, and the mean daily balance is 2.52.

In the third subperiod, from February 5 to 8, inclusive, in which 3 grams of boric acid were administered daily, the balance, as compared with the fore period, increases in the case of No. 7 and diminishes in No. 10. The average daily balance is 1.85. The digestion in all cases after this period became so deranged that the fragmentary data collected thereafter are of no comparative value.

SERIES III.

The data for this series are more satisfactory, only two of the subjects, Nos. 2 and 6, failing to complete the course, they having succumbed to an attack of grippe after the fore period. No. 2 completed the metabolism of the series, but failed to take the full amount of preservative.

In this series in the fore period there was a notable difference between the subjects in regard to the daily nitrogen balance, it being a minus quantity of 0.43 gram in the case of No. 1 and a plus quantity of 1.86 in the case of No. 5. For the four who completed the preservative period the average daily balance is 0.83.

In the first preservative subperiod, 1 gram administered daily, the average daily balance for five men is 1.12 grams, and for the four 1.01; in the second, where 2 grams were given, for the four it is 1.36; in the third, in which 3 grams were administered, the average daily balance is minus 0.37. For the three periods for the four who completed the test the daily balance is 0.66.

In the after period, extending over eight days, the average daily balance for the four is 2.92.

These data show that the administration of the boric acid had very little effect upon the metabolism of the nitrogen during the period, and what effect was manifested was irregular. The first and second preservative subperiods showed a slightly reduced excretion of nitrogen, while the third showed an increased excretion of nitrogen and the after period a diminished excretion. The maximum difference, however, between any two of these periods is about 3 grams of nitrogen per day.

SERIES IV.

In the fore period of Series IV the average daily balance is 0.98 gram for Nos. 8, 9, and 10, the largest balance being found in the case of No. 8, 18.17, and the smallest, a negative quantity, in the case of No. 10, −5.61.

In the first preservative subperiod, where one-half a gram was administered, the average daily nitrogen balance is 0.93. In the second and third subperiods, in which 1 gram was given, the average daily balance is 1.31. The mean daily balance for the first, second, and third subperiods, March 28 to April 9, inclusive, is 1.28. In the fourth subperiod, in which 2 grams were given for four days and 3 for one day, the average daily nitrogen balance is 2.29.

For the entire preservative period—namely, from March 28 to April 14, inclusive—the mean daily balance is 1.56.

For the after period, April 15 to 22, inclusive, the mean daily balance is 0.83.

In the cases of Nos. 8, 9, and 10 of the fourth series it is seen that the effect of the borax upon the excretion of the nitrogen was not

noticeable in the first preservative subperiod. The second subperiod shows a slightly decreased nitrogen excretion. In the fourth subperiod there is again a decrease in the amount of nitrogen excreted. During the after period there is an increase in the amount of nitrogen excreted, the balance being restored almost to the normal of the fore period, namely, to 0.83.

A comparison of Nos. 7, 8, 9, 10, and 12 may also be given for the fore period and the first preservative subperiod of one-half gram per day. After that period No. 7 was ill and dropped out altogether, and Nos. 11 and 12 received special treatment.

For the fore period the daily nitrogen balance of Nos. 7, 8, 9, 10, and 12 is 1.03, and during the first preservative subperiod, one-half gram daily, 0.97, showing a slight increase in the percentage of nitrogen excreted.

Nos. 11 and 12 may also be compared for their special treatment, in which for the fore period the daily average balance for Nos. 11 and 12 is —0.13, and during the preservative period the average daily balance is 0.75, showing a slightly decreased excretion of nitrogen. The nitrogen in these cases seems to be retained for the purpose of restoring the tissues broken down by previous ill health.

For the after period the average daily balance is 0.91.

SERIES V.

Only three out of the six members of this table completed the entire period of experiment, Nos. 2 and 6 having suffered during a part of the time from illness and No. 4 having withdrawn from the table May 25.

The experience of the previous series having shown that the administration of increasing doses of borax produced feelings of distress, both in the stomach and in the head, it was determined during this series to give a minimum quantity, namely, one-half gram per day, and the period of experiment was extended to cover a little over two months, namely, from April 24 to June 29.

For purposes of comparison this period was subdivided into several periods, namely, the fore period of April 24 to May 1, the preservative period of four subperiods from May 2 to June 20, inclusive, and the after period from June 21 to 29, inclusive. The average daily balance of the fore period is —0.60; of the first preservative subperiod, 1.26; of the second, 0.93; of the third, 0.33; of the fourth, 0.52, and of the after period, 1.08.

It is seen that there was but very little effect produced as a whole upon the nitrogen excretion during these periods. The individual variations, however, are somewhat marked, thus giving additional evidence of the danger of basing conclusions upon too few observations.

COMPARISON OF NITROGEN BALANCES.

In order to get a general statement of the nitrogen balance during the whole period of observation the average daily balances for Series I, III, IV, and V have been summarized by periods. The general summary of the nitrogen tables arranges the data of all the five series by periods, and from this summary the following average daily nitrogen balances are obtained, the data for Series II being omitted (see Table LV, p. 306):

	Grams.
Fore periods	0.964
Preservative periods	1.020
After periods	1.690

We see from the above data that during the thirty-one days embraced by the fore periods the average daily nitrogen balance per man is 0.964 gram. During the ninety-three days of borax treatment the average daily nitrogen balance is 1.02. During the thirty-five days of after period the average daily nitrogen balance is 1.69. The total effect, therefore, of the administration of borax upon the nitrogen balance has been to decrease slightly the amount of nitrogen excreted in proportion to the whole amount entering into the food. The disturbance produced, although slight, is perceptible. The fact that the magnitude of this disturbance is increased rather than diminished during the after period might be cited as evidence that the preservative is not the real cause of the phenomenon observed. This, of course, must receive due consideration. On the other hand, it may also be suggested that the maximum effect produced by the preservative might not have been felt until some days after its withdrawal from the food, and this explanation of the above data is also worthy of consideration.

PERCENTAGE ELIMINATED.

The percentage of nitrogen eliminated in the feces and urine has been calculated for each person under observation daily and by periods. These data are complementary to those showing the balances by days and periods, which have just been given, the percentages being perhaps somewhat more convenient for comparison.

SERIES I.

For the fore period, December 16–21, inclusive, the average daily percentage of nitrogen eliminated in the feces and urine for the six men is 87.6. (See Table XLVI.) The highest percentage eliminated is found in the case of No. 6, namely, 101.2, and the lowest in the case of No. 3, 76.3.

For the first preservative subperiod, extending from December 22 to December 26, inclusive, the average percentage of nitrogen eliminated is 95.1. The highest percentage eliminated is found in the case of No. 6, 108.5, and the lowest in the case of No. 5, namely, 86.7.

In the second preservative subperiod, extending from December 27 to December 30, inclusive, the average percentage eliminated is 87.6. The highest is found in the case of No. 6, namely, 93.9, and the lowest in No. 3, 81.9.

In the third subperiod the average percentage of nitrogen eliminated is 92.6. The highest percentage eliminated is found in the case of No. 6, namely, 127.5, and the lowest in No. 2, 81. During this period the elimination of nitrogen by No. 6 is very marked, indeed.

For the entire preservative period, extending from December 22 to January 3, inclusive, the average percentage of nitrogen eliminated is 91.8. The highest amount is again found in the case of No. 6, namely, 107.6, and the lowest in that of No. 3, 88.1.

For the after period, extending from January 4 to January 13, inclusive, the average elimination of nitrogen is 89.8 per cent. The highest percentage is found in the case of No. 6, namely, 93.5, and the lowest in No. 3, 82.7.

The above data show a marked tendency to an increased elimination of nitrogen during the administration of the boric acid. This is manifested particularly in the case of No. 6, where the amount of nitrogen lost is excessively large. In the case of No. 2 there is but little effect produced, showing a marked toleration of the influence of borax in this particular instance. The same is true of No. 5, practically no effect upon the elimination of the nitrogen being manifested.

SERIES II.

The data for Series II are extremely imperfect by reason of the illness of Nos. 8, 9, 11, and 12 during the whole period, and the illness of the whole number under observation during the after period. The data of Nos. 7 and 10 are interesting but can not be regarded as very conclusive.

During the fore period the average daily percentage of nitrogen eliminated by the two under observation is 89.8. During the first preservative subperiod it rises to 90.9, during the second to 86.7; for the first and second subperiods it is 88.5; during the third subperiod the percentage rises to 90.1, and for the entire preservative period it is 89.1. In the case of No. 7 the percentage of nitrogen eliminated is diminished, in the case of No. 10, increased.

SERIES III.

In this series the percentage of nitrogen eliminated during the fore period is high, namely, 95.3. During the first preservative subperiod the percentage eliminated is slightly decreased, namely, to 94.6. During the second subperiod it falls to 91.6. During the third subperiod there is a very decided increase in the percentage eliminated, rising to 102.6. The average for the three subperiods is 96. During the after

period the percentage eliminated falls to 84.3. This number is evidently below the normal, showing an attempt on the part of the body to restore a portion of the loss produced by the previous preservative period.

The data in this series as a whole show the same results as in Series 1. The variations, however, in the case of the first and second subperiods should be noted.

The average data given are calculated only for those members of the class who completed the whole series. The data for the other members are given in the table, but not utilized in the general average for comparison.

SERIES IV.

In this series the data were greatly disturbed by the illness of a number of the members of the class. The reports for Nos. 8, 9, and 10 are the only ones that are complete for the whole period. The average daily percentage of elimination during the fore period in the case of Nos. 8, 9, and 10 is 94.7. This rises to 95.1 in the first preservative subperiod, falls to 90.8 in the second subperiod, and rises again to 93.2 in the third subperiod. The mean for the three subperiods is 93, which is slightly less than the average percentage eliminated during the fore period. During the fourth subperiod the average percentage excreted is 87.1, and for the four subperiods together 91.4. During the after period the average percentage excreted rises to 95.1.

The general results of these data are contradictory to the other series. It must be borne in mind, however, that both Nos. 8 and 9 had suffered very seriously from the grippe during the period of the second series, when they were not under observation at all, and therefore no comparison can be made with any previous record for these two. In other words, the data of this series must be regarded not only as imperfect, as is shown by the table itself, but also in some respects as abnormal. They are given, however, in full, in order that no fact connected with the observation which bears at all upon the interpretation of the results may be omitted from the tabulation.

Nos. 11 and 12, who had a late start on account of illness, may be studied together. The mean percentage eliminated during the fore period in these cases is 101.1, during the preservative period 95.1, and during the after period 93.6. These data must be interpreted from the point of view that both subjects had been ill immediately preceding the experiment.

SERIES V.

In this series No. 4 left the city on May 25, and the data in this case are incomplete. No. 6 received no preservative after June 12 and No. 2 after June 11, both by reason of illness.

Let us first consider the three subjects, namely, Nos. 1, 3, and 5,

who completed the entire series. In this series of observations we also have to deal with apparently an abnormal state, inasmuch as the percentage eliminated during the fore period is remarkably high, amounting to 103.6.

During the first preservative subperiod the percentage eliminated falls to 93; during the first and second together it is 93.9; during the first, second, and third together it rises to 95.2; during the first, second, third, and fourth it rises to 95.7, and during the after period it falls to 94.1. Compared with the fore period it is seen that the average elimination of nitrogen is diminished during the administration of the borax, and the diminution continues during the after period. The data, therefore, as a whole are not decisive in respect to this point.

COMPARISON OF PERCENTAGES OF NITROGEN ELIMINATED.

It remains now to combine the average results into a single expression in order to study the five series together. This is done in the following tabular arrangement, taken from the general nitrogen summary (Table LV):

	Per cent.
Fore periods	94.5
Preservative periods	94.1
After periods	90.3

We have in the above tabulation an expression of the average daily effect produced over a period of seven months on 12 young men in classes of 6 alternating in periods of observation. The total duration of the fore periods is thirty-one days, of the periods of the administration of borax ninety-three days, and of the after periods thirty-five days. While the individual data, and even the series data, are in some respects conflicting and contradictory in regard to the effect of the borax upon the percentage of the elimination, we must regard the expression as a whole as of value. This shows the tendency of borax to slightly decrease the percentage of nitrogen eliminated during the preservative period, which diminution becomes marked in the after period, indicating a cumulative effect in this direction.

PHOSPHORIC ACID.

BALANCE.

The effect of the administration of preservatives upon the course of the phosphoric acid on its way through the body is studied in the same manner as in the case of nitrogen. The total phosphoric acid and phosphorus entering the body were determined by the analyses of the foods, and the phosphoric acid and phosphorus leaving the body through the urine and feces were also determined. In the tables LVI–LXVI, pp. 307–353) the excess of the phosphoric acid in the food

over that recovered in the excreta is given as a positive number, while any excess of phosphoric acid and phosphorus in the excreta over that in the food is given as a negative quantity.

In the daily balances, as was the case with the nitrogen, there was no attempt made to secure an absolute separation in the feces of the food eaten on any given occasion by the administration of some coloring matter like powdered charcoal. For that reason the variations in the daily balances are often exaggerated, inasmuch as the quantities of excreta, especially of feces, vary greatly from day to day. In periods extending over four or five days, however, these variations would be practically compensatory, so that the expression of the total balance for each period is approximately correct. Attention should be called, however, as in the preceding cases, to the fact that owing to the great difficulty of marking with absolute certainty the excretory processes some slight differences or errors are to be expected. These, however, are again eliminated from the averages of the periods by combining them all into a single expression.

SERIES I.

In the fore period the average daily balance per man is found to be 0.081 gram. The largest positive balance for the fore period is 2.14, and the largest negative balance for the period 0.768.

In the first preservative subperiod, extending from December 22 to December 26, inclusive, the average daily balance for the whole period is −0.182. The only positive balances during this whole period are found in the cases of Nos. 1 and 2, namely, 0.438 and 0.258, respectively, and the largest negative balance is found for No. 4, namely, 2.407.

In the second subperiod, extending from December 27 to December 30, inclusive, the average daily balance for the period is 0.289. The largest positive balance for the period is found in the case of No. 5, namely, 1.968, and there is no negative balance.

In the third subperiod, extending from December 31 to January 3, inclusive, the average daily balance is 0.031. The largest positive balance for the period is found in the case of No. 5, 1.786, and the largest negative balance in the case of No. 1, 2.989.

For the entire preservative period, from December 22 to January 3, inclusive, the average daily balance is 0.029. The largest positive balance for this period in any case is found in No. 5, namely, 3.255, and the largest negative balance in the case of No. 1, 0.873.

In the after period, extending from January 4 to January 13, inclusive, the average daily balance is 0.029. The largest positive balance during this period is found in the case of No. 5, namely, 3.494, and the largest negative balance in the case of No. 6, 2.124.

In this series as a whole it is seen that the administration of the

preservative caused only a small disturbance in the phosphoric acid balance—a disturbance of such a magnitude as to be readily accounted for by the ordinary and necessary variations in the sampling and collection of samples for analysis. Interpreted literally, it is seen that in the first preservative subperiod the quantity of phosphoric acid excreted is increased. In the second subperiod the quantity is diminished. In the third subperiod there was a slight increase in the quantity of phosphoric acid excreted over the fore period. The after period compared with the fore period shows a slight increase in the amount of phosphoric acid excreted, while it is the same as the entire preservative period.

SERIES II.

The value of the data obtained during the second series of experiments, as was the case with the nitrogen balance, is almost completely vitiated by the illness of the members of the table. Nos. 8, 9, and 11 were out of the experiment altogether on account of an attack of grippe. Nos. 7, 10, and 12 finished the fore period and two preservative subperiods, Nos. 7 and 10 the three preservative subperiods, but all were so ill at the end of the final subperiod that the after period had to be discarded with Nos. 10 and 12, and was extremely incomplete for No. 7. The fore period is also incomplete in this respect on account of the failure to get all the data for the excreta for January 19 and 20. For the rest of the fore period, considering Nos. 7, 10, and 12, it is seen that the average daily balance per man for phosphoric acid is 0.26 gram. The largest positive balance for the whole period is found in the case of No. 12, namely, 5.16, and the only negative balance in the case of No. 1, 1.58.

In the first preservative subperiod the data for No. 10 were irregular by reason of illness for two days, during which time the excreta were not collected in such a way as to be of any value, and the data were discarded. The average daily balance for this period is 0.20. The largest positive balance for the period is in the case of No. 12, namely, 2.17, and the only negative balance in the case of No. 7, 1.03.

For the second subperiod the average daily balance is 0.04. The largest positive balance is found in the case of No. 12, namely, 0.92, and the only negative balance in the case of No. 10, 2.13.

For the two subperiods of January 28 to February 4, inclusive, the average daily balance is 0.07.

The data for the remainder of the series include only Nos. 7 and 10. For the third subperiod the average daily balance is 0.06. The balance of No. 10 is positive, namely, 1.45, and of No. 7 negative, 0.97.

For the entire preservative period from January 28 to February 8, inclusive, the average daily balance is −0.05. There is a positive balance in the case of No. 10, namely, 0.17, and a negative balance in the case of No. 7, 1.30.

As has been before intimated, there were no comparable data obtained for the after period on account of the illness of all the members of the class.

SERIES III.

For the fore period the average daily balance for Nos. 1, 3, 4, and 5 is 0.31 gram. The largest positive balance for the period is found in the case of No. 4, namely, 5.56, and the only negative balance in the case of No. 1, 1.30.

The data for the first preservative subperiod are incomplete by reason of the loss of all the samples of urine for March 2. For the other three days the average daily balance is −0.26. The largest positive balance is found in the case of No. 3, namely, 0.77, and the largest negative balance in the case of No. 5, 2.60. No. 6, by reason of illness, took no part in this and the subsequent periods of this series.

For the second subperiod, March 4 to 7, inclusive, the average daily balance is 0.08. The largest positive balance for the period is found in the case of No. 3, namely, 1.60, and the only negative balance in No. 4, 0.97.

For the third subperiod, extending from March 8 to 11, inclusive, the average daily balance is 0.08. The largest positive balance for this period is in the case of No. 1, namely, 1.59, and the only negative balance in the case of No. 4, 1.56.

For the three subperiods, extending from February 28 to March 11, inclusive, the average daily balance is −0.02. The largest positive balance for the period is found in the case of No. 3, namely, 2.88, and the largest negative balance in No. 4, 3.87.

For the after period, extending from March 12 to March 19, the average daily balance is 0.65. The largest positive balance is found in the case of No. 5, namely, 6.08, and the smallest positive balance in No. 1, 1.60. There were no negative balances during this period.

In studying the data as a whole it is seen, as in the case of the first series, that the administration of the preservative did not exert any very marked effect upon the excretion of phosphorus. The same tendency, however, which is manifested in the first series is maintained in the third, i. e., an increase during the preservative period in the amount of phosphorus excreted. Unlike the first series, however, the quantity of phosphorus excreted diminished considerably during the after period of the third series.

SERIES IV.

During the fourth series, extending from March 20 to April 22, inclusive, there was a considerable derangement of the comparative work by reason of illness of some of the members of the experimental table.

Only Nos. 8, 9, and 10 completed the entire fourth series. No. 7

completed the fore period and the first preservative subperiod; No. 11 completed all the periods, but received a different amount of preservative from that given to Nos. 8, 9, and 10. In the table, therefore, there is a summary of the data for Nos. 8, 9, and 10 for the entire period; for Nos. 7, 8, 9, 10, and 12 for the fore period and the first preservative subperiod, and for Nos. 11 and 12 for the whole period.

In the case of Nos. 8, 9, and 10 it is seen that the average daily balance for the fore period is 0.51 gram. The highest positive balance for the period is in the case of No. 8, namely, 6, and the smallest positive balance is in No. 4, 1.95.

For the first preservative subperiod the average daily balance per man is −0.24. The largest negative balance is in the case of No. 10, namely, 1.54, and the smallest in No. 9, 0.01. There are no positive balances.

For the second subperiod the average daily balance is 0.54. The largest positive balance is in the case of No. 9, namely, 3.12, and the smallest in the case of No. 10, 1.65. There are no negative balances.

For the two subperiods March 28 to April 4, inclusive, the average daily balance is 0.15. The largest positive balance is in the case of No. 9, namely, 3.11, and the smallest in No. 10, 0.11. There are no negative balances.

For the third subperiod the average daily balance is 0.00. The largest positive balance is in the case of No. 8, namely, 1.33, and the only negative balance in No. 9, 1.35.

For the three subperiods, March 28 to April 9, inclusive, the average daily balance is 0.09. The largest positive balance is in the case of No. 9, namely, 1.76, and the smallest in No. 10, 0.14. There are no negative balances.

For the fourth subperiod the average daily balance is 0.15. The largest positive balance is in the case of No. 8, namely, 2.38, and the largest negative balance is in the case of No. 9, 0.12.

For the four subperiods from March 28 to April 14, inclusive, the average daily balance is 0.11. The largest positive balance is in the case of No. 8, namely, 4.10 for the whole period, and the smallest is in No. 10, 0.12. There are no negative balances.

For the after period the average daily balance is 0.24. The largest positive balance is in the case of No. 8, namely, 2.98, and the only negative balance is in the case of No. 10, 0.30.

Considering Nos. 7, 8, 9, 10, and 12, for the fore period the average daily balance is 0.28, and for the first preservative subperiod it is −0.31.

In the case of Nos. 11 and 12 there were some irregularities in the conduct of the experiment. No. 11 was not under observation at all from March 27 until March 31, and No. 12 was not under observation until April 3. From March 31 to April 3 in the case of No. 11, and from April 3 to April 5 in the case of No. 12 constituted the fore period, no preservative being given. The average daily balance for

this period for the two members is 0.73. No. 11 from April 4 to 11, inclusive, and No. 12 from April 6 to 11, inclusive, received 1 gram of borax per day, except on April 4, when No. 11 received only half a gram. On April 12 and 13 each received 2 grams, and on April 14, 3 grams. The average daily balance for this period (April 4–14) is 0.12. During the after period the average daily balance for the two is −0.01.

The value of the data in the cases of Nos. 11 and 12 is, of course, greatly vitiated by reason of the illness of these two members immediately preceding the experiment. In so far as it extends, however, they show again a marked increase in the amount of phosphorus excreted under the influence of the borax administered. During the after period this increase was also continued, but in a very moderate degree.

In the consideration of the data of Series IV for comparison with the other series it is advisable to eliminate all except the complete data for Nos. 8, 9, and 10. Considering these data, we find again the same tendency as in Series I and III to increase the quantity of phosphoric acid excreted under the influence of the borax. There is a marked increase in excretion during the administration of borax, and there is a tendency shown to return to the normal state by decreasing the phosphoric acid excreted during the after period.

SERIES V.

In Series V the data are complete for only three members, namely, Nos. 1, 3, and 5. The continued illness of No. 6, or, rather, his failure to regain a perfectly normal state, excluded the data in his case from consideration. No. 2 did not finish the fourth preservative subperiod, while No. 4 did not finish the third subperiod.

In the fore period, extending from April 24 to May 1, the average daily balance for Nos. 1, 3, and 5 is −0.53. There are no positive balances for the period. The largest negative balance is for No. 5, 3.96.

During the whole of the preservative period, extending from May 2 to June 20, the uniform quantity of one-half gram of boric acid was given daily. The data are so nearly the same that it is not necessary to enter into any detailed discussion. The period was divided into four subperiods for comparison. During the first and second preservative subperiods, from May 2 to May 25, inclusive, the average daily balance for Nos. 1, 3, and 5 is −0.30. During the first, second, and third subperiods, from May 2 to June 6, inclusive, the mean daily balance is −0.35. During the first, second, third, and fourth subperiods, May 2 to June 20, the average daily balance is −0.34.

During the after period, from June 21 to June 29, inclusive, the average daily balance is −0.30.

The data show practically no change in the phosphoric-acid balance

between the preservative and after periods, while in each case the negative number is smaller than for the fore period. The explanation of the fact that in this series the quantity of phosphoric acid eliminated is greater than that found in the food, is not evident. It may have some connection with the advent of warm weather, but this is only a suggestion and not in any sense an explanation of this anomaly.

COMPARISON OF PHOSPHORIC-ACID BALANCES.

These data show notable variations in the quantity of phosphoric acid excreted during the period of the observation. In order to bring together the whole of the data for comparison, as was done in the case of the nitrogen balance, there are collected in the following tabular statement the mean values obtained from the phosphoric-acid balance during the several series and periods of the series just mentioned.

	Gram.
Fore periods	+0.119
Preservative periods	− .133
After periods	+ .127

These collective data show that, while the influence of the preservative is not very marked on the metabolism of phosphorus and phosphoric acid, there is a distinct tendency to increase the quantity of phosphoric acid excreted during the period of the administration of the preservative.

PERCENTAGE ELIMINATED.

The marked differences in the daily percentages of phosphoric acid eliminated are chiefly explicable, as has been already intimated, by the fact that no attempt was made to separate the feces corresponding to a given quantity of food for twenty-four hours by the use of powdered charcoal or otherwise. The result is, therefore, that, by reason of the great daily differences in the quantity of urine and feces excreted, the daily percentages of phosphoric acid excreted vary much more widely than would be the case if the total quantity of feces and urine from the food for the period of twenty-four hours were examined as a whole. The average percentage excreted for the periods in each case is determined by dividing the total weight of phosphoric acid eliminated by the total weight contained in the food. The mathematical average of the separate averages of the individual cases would be slightly different from this figure. It may be added also in this connection that the phosphoric acid, that is, P_2O_5, which is considered includes not only the total phosphorus in the food and in the excreta in the form of phosphoric acid, but also the organic phosphorus calculated to that form of combination.

SERIES I.

During the fore period the average daily percentage of phosphoric acid excreted per man is 98; during the first preservative subperiod,

104.7; during the second subperiod, 92.9; during the third subperiod, 99.2; during the first, second, and third subperiods together, 99.3, and during the after period, 99.2.

In these data it is seen that the quantity of phosphoric acid eliminated is greater during the preservative period than during the fore period and almost the same as during the after period. In this connection it must be remembered, however, that the effect of the boric acid must extend to a considerable part of the after period, inasmuch as it requires a number of days after the administration of the preservative is discontinued before the accumulated stock in the body is completely eliminated.

SERIES II.

In this series, as has already been intimated, the data are incomplete by reason of the illness of Nos. 8, 9, and 11 for the whole period, of No. 12 during a portion of the preservative period, and of all the members of the class during the after period. The fragmentary data may be of some value and are given complete in so far as they could be determined.

The mean daily percentage of elimination during the fore period of Nos. 7, 10, and 12 in Series II is 94.1; during the first preservative subperiod, 95.6; during the second subperiod, 101; during the two subperiods together, 98.4. As already stated, by reason of the illness of the entire class there is no after period.

In these data, fragmentary though they are, we notice a marked increase in the quantity of phosphoric acid excreted during the preservative period. The above summary stops with the second subperiod, as No. 12 received no preservative after that time. Nos. 7 and 10, however, continued through the third subperiod, and the summary for these two men shows the following data:

During the fore period the average percentage of phosphoric acid eliminated is 99.4; for the first preservative subperiod, 100.7; for the second subperiod, 104.2; for the two subperiods together, 102.7; for the third subperiod, 98.6; for the three subperiods, 101.2.

The conclusion based on the data for the three subjects above mentioned are confirmed by the data for the two, viz, Nos. 7 and 10.

SERIES III.

This series of observations, showing the percentage of phosphoric acid eliminated, is also incomplete by reason of the illness of No. 6 after the fore period and No. 2 after the first preservative subperiod. The other data are complete. The mean daily percentage of elimination of phosphoric acid during the fore period is 93.5; during the first preservative subperiod, 105.6; during the second, 98.2; during the third subperiod, 97.7; during the first, second, and third subperiods together, 100.4; and during the after period, 86.

These data show a marked increase in the percentage of phosphoric acid eliminated during the administration of the boric acid and a very marked decrease during the after period.

The summary for five men shows the same tendency to increase the elimination of phosphoric acid during the preservative period.

SERIES IV.

Attention has already been called to the fragmentary nature of the data of the fourth series, and this fact must be considered in the interpretation of the data in so far as they have been obtained. Only in the cases of Nos. 8, 9, and 10 are complete data available. In these cases it is seen that the percentage of elimination during the fore period is 89.6; during the first preservative subperiod, 104.9; during the second, 89.1; during the first and second subperiods together, 96.9; during the third subperiod, 100; during the first, second, and third together, 98.1; during the fourth subperiod, 96.9; and during the first, second, third, and fourth subperiods together, 97.8; during the after period, 94.6.

In this series we again see a marked influence exerted to increase the excretion of the phosphoric acid during the administration of the borax.

In the cases of Nos. 11 and 12 illness required the interruption of the observations for a time. They were subjected to renewed observations on March 31 and April 3, respectively. During the fore period, which lasted to April 3 and April 5, inclusive, respectively, the percentage of phosphoric acid eliminated is 79. During the preservative period, April 4 to April 14, inclusive, the percentage eliminated is 103. During the after period, April 15 to April 22, inclusive, the percentage is 100.3. These data show the same tendency as those for the three men, but they are not conclusive by reason of the fact that the observations began immediately after illness.

SERIES V.

In this period we have a peculiar condition confronting us. It must have been an abnormal period, in so far as the excretion of phosphoric acid is concerned, throughout the whole of its duration of more than two months. At the very beginning it is seen that the amount of phosphoric acid eliminated during the fore period is abnormal, amounting to 112.4 per cent for Nos. 1, 3, and 5, who completed the entire course. This falls during the first preservative subperiod to 105.9. It rises during the first and second subperiods together to 106.8. There is again a slight increase in the first, second, and third subperiods, taken together, to 107.9 per cent, and during the first, second, third, and fourth subperiods the percentage is about the same, 107.8. During the after period it falls to 106.3 per cent. It is thus seen that the data for

the entire preservative period, namely, 107.8, show a slight decrease from the fore period, and the decrease continues during the after period.

As has been the case with all the calculations, the individual data have been carefully checked and found to be correct. If any error, therefore, has crept into the observations it has been in the imperfect collection of samples, or other errors in analysis which could not now be corrected. As the analytical data, however, were compiled by the same experts throughout the entire course, it is hardly likely that they would have been influenced by a systematic error running through the whole series. It is true that four of the subjects experimented upon during the fifth series had already passed through two periods of borax administration previous to the beginning of the fifth series. They were members of the first and third classes. It is hardly probable, however, that there would have been any continued influence relating to the excretion of phosphorus remaining from the experimental work of the first and third series. It is, of course, a matter of regret that data of this kind should show apparent contradictions, but probably it is unavoidable when the experiment is conducted, as in this case, with so many individuals, extending over so long a period, and without that absolute control which would be desirable if practicable.

COMPARISON OF PERCENTAGES OF PHOSPHORIC ACID ELIMINATED.

In order to bring together as a whole the results of the experimental work, the mean data obtained are compared in the following tabular statement:

	Per cent.
Fore periods	97.3
Preservative periods	103.1
After periods	97.0

The above summary shows a marked influence exerted by the administration of borax upon the excretion of phosphoric acid. While it is true that there are many contradictory data, yet it must be admitted that when the whole work is compared the influence mentioned above is clearly brought out.

Another point to be considered is that this influence is manifested even in the first periods of the administration of borax, when the quantities are extremely small as compared with those subsequently given. It is thus fair to conclude that even small quantities of borax have a tendency to influence in a marked degree the excretion of phosphorus. The question of whether or not such an increase is useful or deleterious may be difficult to decide definitely. One point, however, is brought out in a vivid light, namely, that as a whole the normal conditions attending the digestion of ordinary food are decidedly disturbed by the addition of this preservative. It is necessary, therefore,

in order to justify its use, that some positive evidence be produced to show that this disturbance of a normal condition is of a beneficial nature.

FAT.

Balance.

This balance has been calculated for Series II to V, inclusive, no data having been obtained in Series I. (See Tables LXVII-LXXV.) The fat balance, of course, is unsatisfactory because of the inability to get meat with a constant percentage of fat. The amount of fat exhibited in the daily rations, therefore, varied considerably, and likewise in the periodic rations. For this reason the expression of the fat balance for each period may not always coincide with the percentage of fat eliminated.

SERIES II.

For the fore period, January 19–27, inclusive, the average daily fat balance per man for Nos. 7, 10, and 12 is 138.34 grams; for the first preservative subperiod, January 29–31, inclusive, 134.88; for the second subperiod, February 1–4, inclusive, 126.63; for the first and second subperiods together, January 28 to February 4, inclusive, 130.38. The balance for the third preservative subperiod is, in the case of No. 12, subject to the same criticism as has already been made, namely, that during this period No. 12 was almost ill and not able to eat full rations. This accounts especially for the abnormal balances of February 6, 7, and 8. No. 12 is no longer under observation after this time. It is necessary, therefore, to confine the comparison of data to those for Nos. 7 and 10. For the fore period the balance for these two is 141.77; for the first preservative subperiod, 136.85; for the second subperiod, 134.76; for the third subperiod, 122.29; and for the first, second, and third together, 130.80. There was no after period in Series II.

The data of this table show a tendency on the part of the preservative during the time it was administered to decrease the absorption of fat.

SERIES III.

Four members of the class were present and under observation during the entire series. For them the daily average fat balance for the fore period, February 19–27, inclusive, is 106.93. For the first preservative subperiod, February 28 to March 3, inclusive, the daily fat balance is 117.74; the second subperiod, March 4–7, inclusive, 115.54; for the third subperiod, March 8–11, inclusive, 96.78; for the first, second, and third subperiods together, February 28 to March 11, inclusive, it is 109.85; and for the after period, March 12–19, inclusive, 100.64.

There seems to be no regularity in this case regarding the influence of the preservative upon the fat balance. There is a decided increase in the fat balance during the first and second subperiods, and a marked decrease during the third subperiod. When the three subperiods are taken together they show an increase in the amount of fat absorbed. During the after period the fat balance is considerably increased over that of the last preservative subperiod.

SERIES IV.

Only three members of the class completed the fourth series of observations, namely, Nos. 8, 9, and 10. The average fat balance for the fore period, March 20–27, inclusive, is 114.32; for the first preservative subperiod, March 28–31, inclusive, 107.85; for the second subperiod, April 1–4, inclusive, 114.32; for the first and second subperiods together, March 28 to April 4, inclusive, 111.08; for the third subperiod, April 5–9, inclusive, 112.34; for the first, second, and third subperiods taken together, March 28 to April 9, inclusive, 111.56; for the fourth subperiod, April 10–14, inclusive, 110.05; for the first, second, third, and fourth together, March 28 to April 14, inclusive, 111.15; and for the after period, April 15–22, inclusive, 105.40.

These data show that during the four preservative subperiods the amount of fat consumed in the body is somewhat less than during the fore period. During the after period the amount of fat consumed is considerably diminished.

Nos. 11 and 12 were ill at the beginning of the series and were not placed under observation until March 31 and April 3, respectively, and the fore period was only four days for No. 11 and three days for No. 12. The fat balance for the fore period is 62.69; for the preservative period 84.44; for the after period 79.38. In this case it is not advisable to make any comparison with the fore period, by reason of its extreme shortness and the preceding bad condition of both subjects.

SERIES V.

Only three members of the class, viz, Nos. 1, 3, and 5, completed the entire series. During the fore period, April 24 to May 1, inclusive, the fat balance is 99.32; during the first preservative subperiod, May 2–13, inclusive, it is 101.45; for the second subperiod, May 14–25, inclusive, 92.33; for the first and second subperiods together, May 2–25, inclusive, 96.96; for the first, second, and third subperiods, May 2 to June 6, inclusive, it is 94.22; and during the first, second, third, and fourth subperiods taken together, May 2 to June 20, inclusive, 93.38. The fat balance during the after period, June 21–29, inclusive, is 100.17.

These data show that there is a slight increase in the amount of fat absorbed during the first preservative subperiod as compared with the

fore period. During the first and second subperiods there is a decrease. During the first, second, and third and also during the first, second, third, and fourth subperiods the amount of fat absorbed in the body is very much less than during the fore period. During the after period the fat balance is slightly increased.

COMPARISON OF FAT BALANCES.

Bringing together the data for Series III, IV, and V, for the sake of a general comparison, we have the following tabular statement, taken from Table LXXV:

	Grams.
Fore periods	106.96
Preservative periods	100.37
After periods	101.86

The data indicate, when the averages for the fore periods and preservative periods are compared, a considerably decreased combustion of the fat, with a tendency to return during the after period to the normal for the fore period.

PERCENTAGE ELIMINATED.

SERIES II.

The expression of the relation between the fat consumed and the fat eliminated is, as has been already intimated, more conveniently given in the form of percentages. If the quantities of fat consumed in the various periods of each series had been absolutely the same, then the expression of percentages of fat eliminated would have had the same relative increase or decrease in magnitude as the expression for the fat balances. This, however, has not always been the case.

The expression for the percentage of fat eliminated by Nos. 7, 10, and 12 for the fore period of Series II, January 19–27, inclusive, is 4.2; for the first preservative subperiod, January 28–31, inclusive, 5.6; for the second subperiod, February 1–4, inclusive, 5.4; for the first and second subperiods together, January 28 to February 4, inclusive, 5.5; for the third subperiod, February 5–8, inclusive, 6; for the entire preservative period, January 28 to February 8, inclusive, 5.6.

The percentages for Nos. 7 and 10 are as follows: For the fore period, 4.6; first preservative subperiod, 6.1; second subperiod, 5.8; third subperiod, 6; entire preservative period, 6.

There was no after period, on account of the illness of all the members of the class.

These data would seem to indicate that the influence of the borax upon the combustion of the fat is slightly restrictive, the percentage of fat eliminated having increased during the administration of the preservative. The data, however, are not conclusive, on account of the lack of the after period. At any rate the influence, even if it exists, is not significant.

SERIES III.

During the fore period, February 19–27, inclusive, for the four men, viz, Nos. 1, 3, 4, and 5, who completed the entire course, the percentage of fat eliminated is 5.1; during the first preservative subperiod, February 28 to March 3, inclusive, 4.9; during the second subperiod, March 4–7, inclusive, 4.7; for the third subperiod, March 8–11, inclusive, 2.8; for the first, second, and third, taken together, February 28 to March 11, inclusive, 4.2; and for the after period, March 12–19, inclusive, 3.7.

These data show an indication conflicting with those of Series II, since they seem to show that the percentage of fat absorbed in the body is increased under the administration of the preservative. This influence, also, does not seem to pass away entirely during the continuance of the after period.

SERIES IV.

In the case of the three members of the table who completed the entire course (Nos. 8, 9, and 10) it is seen that the percentage of fat eliminated during the fore period, from March 20 to 27, inclusive, is 3.3; during the first preservative subperiod, March 28–31, inclusive, 5; during the second subperiod, April 1–4, inclusive, 3.2; during the first and second together, March 28 to April 4, inclusive, 4.1; during the third subperiod, April 5–9, inclusive, 3.6; during the first, second, and third subperiods together, March 28 to April 9, inclusive, 3.9; during the fourth subperiod, April 10–14, inclusive, 3.7; for the four subperiods, March 28 to April 14, inclusive, 3.8; and for the after period, April 15–22, inclusive, 3.6.

These data show a very slight influence, if any, exerted by the preservative on the percentage of fat eliminated. There must have been a considerable increase in the case of the first preservative subperiod, but no marked differences thereafter.

SERIES V.

Only three members of this class completed the entire series, viz, Nos. 1, 3, and 5. During the fore period, April 24 to May 1, inclusive, the percentage of fat eliminated is 3.4; during the first preservative subperiod, May 2–13, inclusive, it is 3.7; during the first and second subperiods, May 2–25, inclusive, 3.8; during the first, second, and third subperiods, May 2 to June 6, inclusive, 3.8; during the first, second, third, and fourth together, May 2 to June 20, inclusive, 4; during the after period, June 21–29, inclusive, 5.4.

These data show a progressive increase in the percentage of fat eliminated up to and including the after period. They do not indicate any marked influence of the preservative in its relation to the consumption of fat.

COMPARISON OF PERCENTAGES OF FAT ELIMINATED.

For a general view of the influence of the preservative upon the percentage of the fat eliminated it is desirable to review the data as a whole. For this purpose they are collected into the following tabular statement, taken from Table LXXV (p. 386):

	Per cent.
Fore periods	4.1
Preservative periods	4.0
After periods	4.2

The data as a whole seem to indicate a very slight influence on the part of the preservative in increasing the percentage of fat consumed in the body. This action must be of very small magnitude, and the data are so contradictory in regard to it individually that the evidence as a whole must be construed with this fact kept in view.

CALORIES.

Balance.

It was considered that it would be of interest to study the effect of the added preservative upon the oxidation of the carbohydrates, fats, and other oxidizable substances in the foods during their passage through the body. To this end the heat-producing power of the foods was determined by a combustion in an atmosphere of oxidation in the usual way, and this was compared with the amount of heat-producing materials left in the excreta. (See Tables LXXVI–LXXXIV.) In the latter case a partial determination of the heat value was made by direct combustion in the bomb for Series II, while in the case of Series III, IV, and V the heat value of the urine was calculated from its analysis. Numerous comparisons, however, of direct determination of heat value and calculation from analysis indicate that the results of the two methods are sufficiently near together to serve for purposes of comparison when large numbers of samples are considered.

It is evident that where the body is neither gaining nor losing in weight the calories balance represents the actual quantity of heat produced during the passage of the food through the body.

No calories were determined in Series I.

SERIES II.

In Series II the calories were studied in the case of only three of the members of the class, and at the end of the preservative period these three were also ill, so that the completion of the series by a study of the after period could not be accomplished. The summary for Nos. 7 and 10 is discussed, as No. 12 did not take the preservative throughout the third subperiod.

During the fore period in this case, January 21–27, inclusive, the average daily balance for Nos. 7 and 10 for the calories is 3,418.3; for the

first preservative subperiod, January 28–31, inclusive, it is 3,253.8; for the second subperiod, February 1–4, inclusive, 3,411; for the two subperiods, January 28 to February 4, inclusive, 3,343.6; for the third subperiod, February 5–8, inclusive, it is 3,439.1. For the three subperiods, January 28 to February 8, inclusive, it is 3,378.3.

A study of this balance sheet, although the data are imperfect, shows that by the administration of boric acid no considerable change in the amount of food burned in the body was produced.

SERIES III.

In this series the data are also incomplete, by reason of the illness of Nos. 2 and 6 after the completion of the fore period, from February 19 to 27, inclusive. The average daily balance of the calories for this period for Nos. 1, 3, 4, and 5 is 2,858; for the first preservative subperiod, extending from February 28 to March 3, inclusive, it is 2,949; for the second subperiod, March 4–7, inclusive, it is 2,788.27; for the third subperiod, March 8–11, inclusive, it is 2,233.11. For the three subperiods, February 28 to March 11, inclusive, the average daily balance of the calories is 2,650.19; and for the after period, March 12–19, inclusive, it is 2,728.07.

The data on this sheet show a slight increase in the combustion of the food during the first preservative subperiod, a slight decrease during the second subperiod, a decided decrease during the third subperiod, and a slight decrease in the three subperiods taken together, with a tendency in the after period to return to the normal of the fore period.

SERIES IV.

Only Nos. 8, 9, and 10 were able to complete the whole of Series IV, and while the data are given for the other members of the class, in so far as the observation extends, the comparison is necessarily based only upon those who completed the series.

The average daily balance during the fore period, March 20–27, inclusive, for Nos. 8, 9, and 10 is 3,440.76; for the first preservative subperiod, March 28–31, inclusive, 3,377.85; for the second subperiod, April 1–4, inclusive, 3,365.34; for the two subperiods March 28 to April 4, inclusive, 3,371.60; for the third subperiod, April 5–9, inclusive, it is 3,465.80; for the three subperiods from March 28 to April 9, inclusive, 3,407.83; for the fourth subperiod, April 10–14, inclusive, it is 3,388.86; for the four subperiods March 28 to April 14, inclusive, it is 3,402.28; for the after period, April 15–22, inclusive, it is 3,051.94.

The data on this balance sheet show but little variation in the balance for the calories during the fore period and the four preservative subperiods. Yet they indicate a restraining influence of the preservative on the combustion of the food. These data, however, must first be compared with the actual amounts of calories in the ingested food, as is

done in calculations of the percentages of the calories eliminated. During the after period the data show a very largely decreased combustion of the food.

SERIES V.

The data for Series V are based on Nos. 1, 3, and 5 only. During the fore period, from April 24 to May 1, the average daily balance is 3,153; during the first preservative subperiod, May 2–13, inclusive, it is 3,396.71; during the first and second subperiods, May 2–25, inclusive, it is 3,241.04; during the first, second, and third subperiods, May 2 to June 6, inclusive, it is 3,112.32; during the first, second, third, and fourth subperiods, May 2 to June 20, inclusive, it is 3,087.05; during the after period, June 21–29, inclusive, it is 3,096.18.

The data on this balance sheet show an increased combustion during the first and second preservative subperiods. The other subperiods show, however, a diminished combustion of the food quite marked in character, while the after period shows the same tendency.

COMPARISON OF CALORIES BALANCES.

In order to secure a general expression of the effect of the added preservative upon the processes of combustion, as in the other cases, it is desirable to bring together all the data into one expression, showing the average daily balances of calories per man throughout the entire experiment, by periods. This is done in the following tabular statement, taken from Table LXXXIV (p. 422):

	Calories.
Fore periods	3,113.58
Preservative periods	3,073.28
After periods	2,950.75

The combination of the data as shown above indicates that the total influence of the borax upon the combustion of the food is not very marked. There is, however, a tendency to a less complete combustion, since the average balance for the preservative periods is slightly less than that for the fore periods and still less for the after periods. Too much stress, however, can not be laid upon this point, by reason of the contradictory nature of the data in the several series, and from the further fact that variations in the temperature, due to seasonal or other influences and other factors beyond control, have a decided influence on the total amount of heat produced. It is evident that when exposed to a low temperature the amount of heat developed in the body must necessarily be greater and the amount of the consumption of combustible matters in the food be thus increased. No definite conclusion, therefore, can be safely drawn from the data collected.

PERCENTAGE ELIMINATED.

A different expression of the changes which the combustible matter in the food undergoes in the body, and one perhaps which is more

valuable than the expression of the calories balance, is the statement of the percentage eliminated. This percentage subtracted from 100 will give in each case the proportion of the total combustible matter consumed.

The data are given only from Series II to V, inclusive, as they were not collected for the first series.

SERIES II.

This imperfect series is given simply for the sake of record, and not because the data in their incomplete state are of any particular significance. The percentage of the calories eliminated for Nos. 7 and 10 in the fore period, January 19–27, inclusive, is 6.6; in the first preservative subperiod, January 28–31, inclusive, 7.7; in the second subperiod, February 1–4, inclusive, 7.2; in the two subperiods from January 28 to February 4, inclusive, 7.4; for the third subperiod, February 5–8, inclusive, 6.6; for the three subperiods, January 28 to February 8, inclusive, 7.1. No complete data were obtained in any case for the after period on account of the illness of all the members of the table.

It is seen that but little influence was produced on the percentage of calories eliminated by the administration of boric acid. What little influence was exerted, however, seems to show a tendency to prevent the consumption of combustible matter in the food when this preservative is administered.

SERIES III.

In this series the data are complete for four members—viz, Nos. 1, 3, 4, and 5—the other two having been ill during a part of the period of observation.

For the fore period, February 19–27, inclusive, the percentage of calories eliminated is 7.1; for the first preservative subperiod, February 28 to March 3, inclusive, it is 7.4; for the second subperiod, March 4–7, inclusive, it is 6.8; for the third subperiod, March 8–11, inclusive, 6.8; for the three subperiods February 28 to March 11, inclusive, 7, and for the after period, March 12–19, inclusive, 6.8.

The data of this table show but little influence exerted by the borax upon the percentage of calories eliminated except in the first preservative subperiod, which shows a slight retarding effect on combustion.

SERIES IV.

In Series IV the data are complete for only Nos. 8, 9, and 10. For these three in the fore period, extending from March 20 to March 27, inclusive, the percentage of calories eliminated is 5.7; in the first preservative subperiod, March 28–31, inclusive, 7.2; in the second subperiod, April 1–4, inclusive, 5.8; for the first and second subperiods together, March 28 to April 4, inclusive, 6.5; in the third subperiod,

April 5–9, inclusive, 5.9; for the first, second, and third subperiods, March 28 to April 9, inclusive, 6.3; for the fourth subperiod, April 10–14, inclusive, 5.9, and for the first, second, third, and fourth subperiods, March 28 to April 14, 6.2. The percentage eliminated during the after period is 6.2.

Here again we find but little disturbance in the percentage of calories eliminated by reason of the administration of the borax.

In the cases of Nos. 11 and 12 the observations were irregular in time by reason of their illness during the fore period. They were first placed under observation March 31 and April 3, respectively, for a fore period which lasted only four and three days, respectively. The percentage of calories eliminated in the fore period is 6.3; in the preservative period, 6; in the after period, 6.3. These data show but little effect produced on food combustion, but that little is to increase it during the administration of the preservative.

SERIES V.

Only three members of the class, viz, Nos. 1, 3, and 5, completed the entire series, and the following data refer to them alone.

During the fore period, extending from April 24 to May 1, inclusive, the percentage of calories eliminated is 6.3; during the first preservative subperiod, May 2 to 13, it is 6.1; during the first and second subperiods, May 2 to 25, inclusive, 6.2; during the first, second, and third subperiods, May 2 to June 6, inclusive, 6.5, and during the first, second, third, and fourth subperiods, May 2 to June 20, inclusive, 6.7. During the after period the percentage of calories eliminated is 7.7. These data show a growing tendency to diminish the combustion of the foods under the administration of the preservative, and this tendency is greatly increased during the after period. If the decrease in the calories balance during the preservative period is due to the effect of the borax, it should have ceased with the withdrawal of the preservative, unless digestion was so impaired as to result in a continuing effect.

COMPARISON OF PERCENTAGES OF CALORIES ELIMINATED.

Collecting the average data showing the percentage of calories eliminated for the third, fourth, and fifth series of observations by periods, we have the following statement, taken from Table LXXXIV:

	Per cent.
Fore periods	6.4
Preservative periods	6.6
After periods	7.0

These data show a slight tendency on the part of the borax to diminish the percentage of combustion of the foods. On the removal of the preservative from the food the decrease in combustion continues and in a more marked manner. The data are not wholly decisive, but

very suggestive. Whether this influence is due to an actual inhibitory effect of the borax upon the combustion of the food, or whether it is due to a diminution in the activity of the first processes of digestion, whereby less of the combustible material is made available for absorption and assimilation, can be determined only by a more intimate comparative study of the composition of the feces and urine.

SOLIDS BALANCE.

The object of this study is to ascertain the total dry matter in the food and its fate in the alimentary canal and in metabolism. The moisture-free matters ingested are compared with the total solids recovered in the feces and urine. This has been done for each individual member of the class for each series and for the periods and subperiods of the investigation. Tables LXXXV–XCV (pp. 423–461) contain the daily data for each case.

SERIES I.

In Series I the part of the fore period covered is December 16–21 only. It will be sufficient for the purposes of the discussion to call attention to the summaries rather than to the individual data. The latter are found in the tables, and if a more detailed study of individuals is desired these can be utilized.

Of 20,603.9 grams of solids ingested in the food in the period mentioned, 865.5 grams, or 4.2 per cent, are found in the feces and 9.7 per cent in the urine. The total percentage recovered in the feces and urine is 13.9, and the balance is 17,731.432 grams. The average daily quantity of solids in the food of each person is 589 grams, of which 24.7 appear in the feces and 82.04 in the feces and urine. The daily balance is 506.958. In the first preservative subperiod, extending from December 22 to December 26, it is seen that 4.4 per cent of the ingested solids appear in the feces and 14.5 in the feces and urine. The average daily quantity of solids in the foods for this period is 605 grams, of which 26.4 grams appear in the feces and 87.59 grams in the feces and urine. The average daily balance during this period is 517.408 grams. During the second subperiod the average daily solids in the food are 635 grams, of which 28.3 grams appear in the feces and 86.221 in the feces and urine, leaving a balance of 548.779 grams. The percentage of total solids excreted in the feces during this period is 4.5 and in the urine 9.1. During the third subperiod the average quantity of solids in the food is 569 grams, of which 28.5 appear in the feces and 56.97 in the urine. There is an elimination of 5 per cent in the feces and 10 per cent in the urine. The balance is 483.503 grams. In the three preservative subperiods taken together the average daily quantity of dry food ingested is 602.5 grams, of which 27.6 appear in the feces and 86.516 in the feces and urine. The

average percentage of excretion of solids in the feces is 4.6 and in the feces and urine 14.4, and the average balance is 515.984 grams. During the after period, extending from January 4 to 13, inclusive, the average quantity of solids in the food is 616 grams, of which 28.3 appear in the feces and 84.429 in the feces and urine. The percentage of solids excreted in the feces is 4.6 and in the feces and urine 13.7, and the average daily balance is 531.571 grams.

It is interesting in this case to see what effect the administration of the preservative had upon the total solids in the feces, and this is best given by percentages rather than by actual quantities because of the variation which takes place in the quantity of solids ingested. We see in this instance that during the fore period the quantity of solids eliminated by the feces is 4.2 per cent. During the three preservative periods it is 4.6 per cent and during the after period 4.6 per cent. These data show that there is possibly a slight tendency on the part of the preservative to increase the solids in the feces. In the case of the urine we find the average percentage of solids excreted during the fore period is 9.7; during the three preservative periods, 9.8, and during the after period, 9.1. In this connection it must be remembered that practically all of the preservative administered appeared in the urine, thus slightly increasing the solids therein. In general it may be said that the preservative has an apparent tendency in this series to increase the solids excreted in the feces.

SERIES II.

The data relating to this series are incomplete and highly unsatisfactory for reasons already set forth, namely, on account of the ravages of the grippe. All the members of the class during the latter part of this series were afflicted with more or less severe attacks of influenza. Solids determinations were made for Nos. 7, 10, and 12 only. The data are interesting and valuable in individual cases, but have been excluded from the general summary of the results. Nevertheless, it has been deemed advisable not to exclude these data from the text and from discussion. As in the case of Series I, the individual data will not be discussed in detail here, but only the summary in so far as a comparison is possible. Two summaries are made of the comparable data in Series II, namely, a comparison of Nos. 7 and 10, and second a comparison of Nos. 7, 10, and 12. In the case of Nos. 7 and 10 the mean quantity of solids ingested daily in the fore period is 673 grams, of which 31.8 grams are recovered in the feces and 99.339 grams in the feces and urine. These data represent 4.7 per cent of the total solids in the food recovered in the feces and 14.8 per cent in the feces and urine. The mean daily balance is 573.661 grams, this representing the total solids utilized by the body. Without discussing the subperiods separately, it will be sufficient to call attention to the summary of the

preservative period, extending from January 28 to February 8, inclusive. The mean quantity of solids ingested in the food during this period is 668 grams, as compared with 673 in the fore period. Of this quantity the mean amount recovered in the feces is 34.7 grams, and in the feces and urine 102.262 grams. The mean percentage of solids recovered in the feces is 5.2 and in the feces and urine 15.3. The mean daily balance is 565.738 grams. The above data show a slight tendency on the part of the preservative to increase the solids in the feces, whereas the quantity of solids appearing in the urine is not changed. This is an indication of the exercise of a slight degree of inhibition on the part of the preservative in the digestion and assimilation of the food. In the second summary of Series II, namely, a comparison of the data of Nos. 7, 10, and 12, it is found that the mean quantity of solids ingested daily in the food, during the fore period, is 694 grams, of which 30.2 grams are recovered in the feces and 64.092 grams in the urine. The percentage of total solids eliminated in the feces is 4.4 and in the feces and urine 13.6. Without discussing the details of the various subperiods it will be sufficient to call attention to the data of the preservative period as a whole, extending from January 28 to February 8, inclusive. During this period the average daily quantity of solids in the food is 627 grams, of which 31.3 grams occur in the feces and 97.471 grams in the feces and urine. The percentage of total solids eliminated in the feces is 5 and in the feces and urine 15.5. In this summary, as in the preceding one, it is shown that the preservative has a slight tendency to increase the solids in the feces. There is also noticed a slight tendency to increase the solids in the urine. A conclusion similar to that stated in the first summary seems to be also justified in this case.

SERIES III.

As in the preceding series the individual data for each member of the class during Series III are found in the tables, and discussion of the data will be confined to the summaries. Four men only completed all the periods of Series III, namely, Nos. 1, 3, 4, and 5. The summary, therefore, is confined to the data of these four men. During the fore period, extending from February 19 to 27, inclusive, the average quantity of solids in the food is 691 grams. Of this amount 26.2 grams are recovered in the feces and 92.5 grams in the feces and urine. The percentage of total solids recovered in the feces is 3.8 and in the urine 11.4. The average daily balance during the fore period is 598.5. Without discussing the data for the various subperiods, attention will be directed to the summary of the whole preservative period, extending from February 28 to March 11, inclusive. The mean daily quantity of solids in the food during this period is 627 grams, of which 24.8 are recovered in the feces and 87.8 in the feces

and urine. The average percentage of total solids eliminated in the feces during this period is 4, and in the urine 10.1. The average daily balance is 539.2 grams. During the after-period, extending from March 12 to 19, inclusive, the average quantity of solids in the food is 621 grams, of which 23.8 grams are recovered in the feces and 79.4 in the feces and urine. The average percentage of solids recovered in the feces is 3.9, and in the feces and urine 12.8. The average daily balance is 541.6 grams. These data show a slight tendency on the part of the preservative to increase the amount of solids appearing in the feces. The total effect, however, is not very great; yet when taken in connection with the preceding data it is evidence of a slight tendency to restrict the activity of the digestive ferments. A second summary has also been obtained with Series III, in which five members of the table are included, namely, Nos. 1, 2, 3, 4, and 5. This summary includes only the fore period and the first subperiod, extending over six days. The average daily quantity of solids in the food during the fore period is 694.2, of which 26.5 grams are recovered in the feces and 91.6 grams in the feces and urine. The average percentage of solids recovered in the feces is 3.8 and in the urine 9.4. The average daily balance is 602.6 grams. During the first subperiod the average quantity of solids in the foods is 687 grams, of which there is recovered in the feces 29 grams, and in the feces and urine 94.1 grams. The average percentage of total solids recovered in the feces during this period is 4.2 and in the urine 9.5, and the average daily balance is 592.9 grams. These data also show, as in the preceding case, a slight tendency on the part of the preservative to increase the percentage of solids in the feces, and to this extent to restrict or limit the activity of the digestive ferments.

SERIES IV.

The individual data in this case are given in full in the balance sheets, but only the summaries will be discussed. In Series IV the summary includes the data for only three of the individuals, namely, Nos. 8, 9, and 10. During the fore period, extending from March 20 to 27, the average quantity of solids in the food is 636 grams. Of this amount 25.3 grams appear in the feces and 86.888 grams in the feces and urine. The average percentage of solids eliminated in the feces is 4 and in the feces and urine 13.6. The average daily balance of solids is 549.112 grams. The data for the various subperiods, extending from March 28 to April 14, are given separately, but the data for the entire preservative period only will be considered in this comparison. During this period the average daily quantity of solids in the food is 646 grams, of which 30.2 grams appear in the feces and 89.803 grams in the feces and urine. The percentage of solids eliminated in the feces is 4.7 and in the feces and urine 13.9. The average daily balance is 556.197 grams. During

the after period, extending from April 15 to 22, inclusive, the average quantity of solids in the food is 547 grams, of which there were recovered in the feces 24.5 grams and in the feces and urine 79.287 grams. The percentage of solids eliminated in the feces is 4.5 and in the urine 10. The average daily balance is 467.713. The data indicate, as in the preceding instances, a slight tendency on the part of the preservative to increase the quantity of solids in the feces, thus indicating a slight tendency to restrict or limit the activity of the digestive ferments.

SERIES V.

The individual data are given in full in the tables. Three different summaries are given for this series. First, for three men, Nos. 1, 3, and 5, who completed the entire series of observations; the second and third for five and six men, respectively, who completed the greater part but not all of the periods of observation. In the summary of the three men for whom complete data are found, in the fore period, extending from April 24 to May 1, the average daily quantity of solids in the food is 605 grams, of which 26.6 appear in the feces and 85.27 in the feces and urine; 4.4 per cent of the total solids in the food are eliminated in the feces and 14.1 per cent in the feces and urine. The average daily balance is 519.73 grams. The summaries for the various subperiods are given separately. The discussion, however, will be confined to the general summary, extending from May 2 to June 20, inclusive. The average daily quantity of solids in the food during this period is 635 grams, of which 29.8 grams are recovered in the feces and 88.202 grams in the feces and urine. The percentage of total solids eliminated in the feces during this period is 4.7 and in the feces and urine 13.9. The average daily balance is 546.798 grams. During the after period the mean daily quantity of solids in the food is 665 grams, of which 37 are recovered in the feces and 95.747 in the feces and urine. The percentage of solids recovered in the feces is 5.6 and in the feces and urine 14.4. The average daily balance is 569.253 grams. These data, extending over a long period, show a slight tendency on the part of the preservative to increase the quantity of solids eliminated in the feces, and this tendency becomes much more marked during the after period. In this respect the data of this series differ from those of all the preceding series. It is noticed, however, that in the last subperiod, extending from June 7 to 20, there is a marked tendency to increase the percentage of solids eliminated in the feces, the percentage eliminated during this period being 5.2. This seems to indicate that the long-continued use of the preservative had a tendency to intensify the restricting influence thereof upon the digestive ferments, and this tendency is continued during the after period.

In the second summary of Series V, including the data for five men, we find the following facts: The total quantity of solids in the food

during the fore period, extending from April 24 to May 1, is 590 grams, of which 25.6 grams appear in the feces and 80.814 in the feces and urine. The percentage of solids eliminated in the feces is 4.3 and in the feces and urine 13.7. The average daily balance is 509.186 grams. During the first subperiod, extending from May 2 to 13, the percentage of solids eliminated in the feces increased from 4.3 in the fore period to 4.6. During the second subperiod, extending from May 14 to 25, inclusive, the percentage of solids eliminated in the feces remains the same as in the first subperiod, namely, 4.6. During the third subperiod, extending from May 26 to June 6, the percentage of solids eliminated in the feces rises to 4.9. During the three subperiods, from May 2 to June 6, the percentage of solids eliminated in the feces is 4.7. These data, although they do not include the latter part of the preservative period nor any of the after period, show, as in the other cases, a slight tendency on the part of the preservative to restrict or limit the activity of the digestive ferments.

The third summary includes six men and the period of observation extends from April 24 to May 25, inclusive. During the fore period, extending from April 24 to May 1, the average quantity of solids in the foods is 578 grams, of which 25.1 grams are recovered in the feces and 79.906 grams in the feces and urine. The percentage of solids in the food eliminated in the feces is 4.3 and in the feces and urine 13.8. The average daily balance is 498.094 grams. In the first preservative subperiod, extending from May 2 to 13, inclusive, the percentage of solids in the food eliminated in the feces rises to 4.6. It remains the same during the second subperiod, at which time the comparison of the six men ceases. These data again show a slight tendency on the part of the preservative to increase the percentage of the solids in the food eliminated in the feces.

COMPARISON OF SOLIDS BALANCES.

In the general summaries it is indicated that the total solids excreted during the preservative periods are somewhat higher than during either the fore periods or the after periods. The effect on the total solids is similar to that on the phosphoric acid. The increase in total solids excreted is due chiefly to their excess in the feces.

The total number of complete individual observations included in each series is as follows: Series I, 6 men; Series III, 4 men; Series IV, 3 men; Series V, 3 men.

These men completed all the periods of the different series. The average daily quantity of solids in the foods during the fore periods in these cases is 631.5 grams. The average quantity appearing in the feces is 25.6 grams, and in the feces and urine 86.699 grams. The average percentage of the total solids in the food appearing in the feces is 4.1, and in the feces and urine 13.7. The average daily bal-

ance is 544.701 grams. During the preservative periods the average daily quantity of solids in the food is 627.6, of which 28.6 grams appear in the feces and 88.025 grams in the feces and urine; 4.6 per cent of the total solids in the food appear in the feces and 14 per cent in the feces and urine. The average daily balance is 539.875 grams. In the summary of the after periods it is seen that the average daily quantity of solids in the food is 614.1 grams, of which 28.3 grams appear in the feces and 84.677 in the feces and urine; 4.6 per cent of the total solids in the foods appear in the feces and 13.8 per cent in the feces and urine. The average daily balance is 530.123 grams.

This general summary confirms the conclusion based upon the individual series. It shows a slight tendency on the part of the preservative to increase the percentage of solids in the food eliminated in the feces, and this increase continues in the same magnitude during the after period. This continued effect is easily explained by the tendency established in the long exhibition of the preservative to slightly derange the digestive functions. It requires at least half of the after period to secure the elimination of the preservative from the digestive system, and the other half of the after period is evidently too short a time to secure in every case the reestablishment of normal conditions.

SUMMARY OF RESULTS.

EXCRETION OF ADDED PRESERVATIVES.

The boric acid and borax taken into the stomach during the progress of these experiments were excreted almost entirely by the kidneys. (See Tables III–VIII.) In the first series of experiments 83.05 per cent was thus excreted, in the second series 82.85 per cent, in the third series 63.87 per cent, in the fourth series 82.96 per cent, and in the fifth series 75.17 per cent. During the course of observation 607.4 grams of preservative were given, either in the form of boric acid or the equivalent in borax, of which 468.69 grams were excreted in the urine, or 77.16 per cent of the whole. (See Table VIII.) These numbers include the data for Series III, where the quantity of the preservative recovered in the urine appears to be abnormally low. In round numbers it may be said that 80 per cent of the boric acid and borax taken into the system in foods is excreted in the urine. It is probable that the rest is chiefly excreted with the perspiration. Only small quantities are found in the feces.

INFLUENCE OF THE PRESERVATIVE UPON THE WEIGHT OF THE BODY.

In every series there was a marked tendency on the part of boric acid and borax to diminish slightly the weight of the body, although this tendency was in some instances checked during the after periods

and a portion of the loss of weight was regained. In general, however, there was a tendency to continue the loss of weight during the after periods. These facts are more strongly brought out by the graphic representations of body weight which are given in this report.

RATIO OF FOOD CONSUMED TO BODY WEIGHT.

Of interest in connection with the other purposes of this investigation is a study of the relation of the weight of food consumed to the body weight, which was made in detail during the first series of observations. This study was made of each individual article of diet, and included a statement of the ratio of the weight of food, including the water consumed, and the ratio of the weight of the dry matter in the food to the body weight. During the fore period, first series of observations, the average daily weight of the moist food, including water drunk, was 4.20 per cent of the total weight of the body, during the preservative period 4.22 per cent, and for the after period 4.21 per cent.

It is seen by the above that the administration of the preservative caused very little variation in the weight of food consumed compared with the weight of the body.

Reduced to water-free basis the quantity of food consumed in relation to the weight of the body is as follows:

	Per cent.
Fore period	0.96
Preservative period	.99
After period	1.01

These data show that there is very little difference in the total quantity of dry matter in the food during the three periods.

From the above data it is seen that the total quantity of dry matter in the food consumed daily is, in round numbers, 1 per cent of the weight of the body. For a man weighing 150 pounds, therefore, the quantity of dry matter daily consumed in the food is, in round numbers, 1.5 pounds.

THE EFFECT OF THE PRESERVATIVE UPON THE NUMBER OF CORPUSCLES AND THE QUANTITY OF HEMOGLOBIN IN THE BLOOD.

There was no regular influence established relating to the effect of the preservative in increasing or decreasing the number of corpuscles in the blood. The data in individual cases are often contradictory, and a general summary of them leads to no conclusive result. The final deduction can only be drawn that if the preservative affects the number of corpuscles and the amount of hemoglobin at all it does so in a very irregular manner, differing in different individuals, and in a way which can not be used as a basis of any definite conclusion.

THE EFFECT OF THE PRESERVATIVE UPON THE COMPOSITION OF THE FECES.

A careful study of the effect of the preservative administered upon the composition of the feces shows a slight tendency to increase the amount of water therein. There is, however, no tendency of any marked nature, even when the preservatives are given in large quantities, to excite diarrhea. The administration of the preservative produces but little change in the weight of dry matter in the feces.

EFFECT OF BORIC ACID AND BORAX UPON THE URINE.

ELIMINATION OF NITROGEN.

The combined data of the four series (excluding Series II) show that the percentage of nitrogen ingested in the food eliminated in the urine during the fore periods is 86, during the preservative periods 85.5, and during the after periods 81.4. This shows a tendency on the part of the preservative to diminish the percentage of nitrogen excreted in the urine, and this tendency is continued in a very marked manner in the after periods.

REACTION.

The data of Series II, III, and V show a marked tendency on the part of boric acid to increase the acidity of the urine. In no case during the administration of boric acid was an alkaline reaction observed. In the case of the urine the marked acidity imparted to it by boric acid is continued in most cases throughout the after periods. The data of Series IV and V, on the contrary, show a marked tendency on the part of borax to diminish the acidity of the urine, and in several instances this substance imparted to the urine an alkaline reaction. These facts indicate that a large part of the borax and boric acid administered is excreted unchanged in chemical composition.

QUANTITY.

Very little effect is produced by these preservatives upon the volume of urine, although there is a slight tendency manifest to decrease the amount. There is a slight tendency also manifested during the administration of the preservatives to decrease the total solids in the urine. In this connection, however, it must be considered that the season of the year has a marked effect upon the amount of urine secreted, the tendency being to secrete larger quantities in cold weather than in warm. Combining the data of Series I, III, IV, and V for those members completing the series, we find that the average daily amount of urine secreted during the fore periods, per individual, is 969 cc; during the preservative periods, 960 cc, and during the after periods, 952 cc. These data show almost no effect of the preservatives on the

quantity of urine secreted, but there seems to be a slight tendency to decrease the amount secreted in the preservative and after periods.

ALBUMIN.

In those few cases where there was normally a mere trace of albumin in the urine it is shown by the data that the general tendency of the preservative used is to increase the trace of albumin in the urine, and this increase is manifested also during the after periods. This effect of the administration of the preservative is best shown in the graphic representation of traces of albumin in the urine.

MICROSCOPIC BODIES.

Microscopic examinations of the urine were made for the following substances: Uric-acid crystals; urates; oxalate of lime; phosphates—crystalline and amorphous; epithelium cells of all kinds; leucocytes; red blood cells; casts—hyaline, finely granular, coarsely granular, epithelial, and other forms; mucous cylindroids; and mucous strands.

The microscopic examinations were made at three periods during each series, except in Series I, during which time the microscopic supervision of the urine had not been instituted. The examinations were made once during the fore period, once or more during the preservative period, and once near the close of the after period.

Reviewing the data as a whole in regard to the appearance of these microscopic bodies in the urine, the fact which appears prominently is the great variation in the number and character of these micro-chemical bodies. They occur constantly in some cases in very much greater abundance than in others. There are a few cases—in fact, quite a number—where the relative abundance of these bodies seems to be increased during the administration of the preservative. There is a smaller number of cases in which the contrary fact occurs. In the greater number of cases, however, the administration of the preservative appears to have had no influence upon the relative abundance of these bodies. The data, therefore, as a whole, can not be regarded as conclusive respecting the influence of the preservative upon the number or kind of micro-chemical bodies occuring in the urine.

INFLUENCE OF THE PRESERVATIVE UPON THE METABOLISM OF NITROGEN.

There is only a slight effect produced as a whole, as determined by the data of experiment, upon the excretion of nitrogen. The individual variations are somewhat marked, showing the danger of depending too positively upon data from only one or two persons. A slight tendency is shown, however, on the part of the preservative to decrease the excretion of nitrogen, which tendency becomes more marked after

the withdrawal of the preservative. For instance, the average nitrogen balance of the four series of observation (excluding Series II), during the fore periods is 0.964, during the preservative periods 1.02, and during the after periods, 1.69 grams per day. Expressed as a percentage, the combined data show an excretion of 94.5 per cent of nitrogen taken in the food during the fore periods, 94.1 per cent in the preservative periods, and 90.3 in the after periods.

The general summary of all the experiments with borax and boric acid indicates the largest elimination of nitrogen in the fore periods, an intermediate amount in the preservative periods, and the smallest elimination in the after periods.

This relation is either produced by causes other than the administration of the preservative or the effect of the preservative continues after its administration has ceased and even after the preservative itself has ceased to be excreted from the body. It is not impossible that such an influence may be exerted. The retarding influence of the preservative probably increases with the length of the experiment, especially in those cases in which the amount of preservative administered is progressively increased. When the administration of the preservative is discontinued the elimination of nitrogen is probably at the lowest point (if depressed by the preservative), and yet during the first days of the after period (at least while the preservative is still in the system) the amount of nitrogen eliminated is probably as low as on the preceding days. There may be a tendency of the preservative in the large amounts in which it is administered to increase the formation of difficultly soluble compounds of nitrogen, and by that means, if no other, retard its elimination from the body.

THE EFFECT OF THE PRESERVATIVE UPON THE METABOLISM OF PHOSPHORIC ACID.

A study of the data relative to the influence of boric acid and borax upon the metabolism of phosphorus reveals many contradictory results. When, however, all the data are collected into one expression it is found that the influence of these bodies added to the food is distinctly marked on the metabolism of phosphorus and phosphoric acid. There is a distinct tendency shown by them to increase the quantity of phosphoric acid excreted during the period of the administration of the preservative. In the combined data of Series I, III, IV, and V the average per cent of phosphoric acid taken in the food eliminated during the fore periods of observation is 97.3, during the preservative periods 103.1, and during the after periods 97.

INFLUENCE OF THE PRESERVATIVE UPON THE ELIMINATION OF FAT.

The influence of boric acid and borax upon the metabolism of fat is not very marked. There is a slight tendency shown to decrease the

elimination of fat in the feces during the administration of the preservative, and a tendency to recover is shown during the after periods. The percentage of fat ingested in the food eliminated during the fore periods is 4.1, during the preservative periods 4, and during the after periods 4.2. These data show that almost no disturbance in the metabolism of fat is caused by the administration of the preservative.

INFLUENCE OF BORIC ACID AND BORAX UPON THE OXIDATION OF THE COMBUSTIBLE MATTER IN THE FOOD.

The collected data of all the series, except Series II, show that 6.4 per cent of the combustible matter in the food is eliminated, unburned, during the fore periods, 6.6 per cent during the preservative periods, and 7 per cent during the after periods. These data show a slight tendency on the part of the preservative to interfere with the combustion of the food in the body, and this tendency is continued in even a more marked manner during the after periods.

INFLUENCE OF THE PRESERVATIVE UPON THE SOLIDS EXCRETED.

The solids summary for all of the series, except Series II, shows that the average quantity of solids in the food during the fore periods is 631.5 grams, during the preservative periods 627.6 grams, and during the after periods 614.1 grams. The average daily quantity of solids appearing in the feces in the fore periods is 25.6 grams, in the preservative periods 28.6 grams, and in the after periods 28.3 grams. The average quantity appearing in the urine during the fore periods is 64.48 grams, during the preservative periods 59.37 grams, and in the after periods 56.20 grams. The average balance of total solids during the fore periods is 544.701 grams, during the preservative periods 539.875 grams, and during the after periods 530.123 grams. These data show a slight tendency on the part of the preservative to increase the total solids excreted in the feces and to decrease the total solids excreted by the urine. There is a distinct tendency manifested by the preservative to interfere with the processes of digestion and absorption. Inasmuch, however, as the total quantity of solids administered in the food varied slightly in the different periods, a fairer interpretation is obtained by comparing the percentages of the total solids exhibited in the food eliminated by the feces and urine, respectively. In this comparison it is found that the total percentage of solids in the food eliminated in the feces during the fore periods is 4.1, during the preservative periods 4.6, and during the after periods 4.6. The percentage of solids in the food eliminated in the urine during the fore periods is 10.2, during the preservative periods 9.5, and during the after periods 9.1. These percentages indicate also very strongly the influence exerted by the preservative mentioned above.

It must be remembered also in this connection that practically 80 per cent of the preservative administered is recovered in the urine, increasing to that extent the total solids thus eliminated. In spite of this, however, there is a marked decrease in the total solids in the urine and a marked increase in the total solids in the feces.

GENERAL CONCLUSIONS.

NECESSITY OF MINERAL SUBSTANCES IN THE BLOOD.

In the consideration of the action of preservatives of a mineral nature, such as borax and boric acid, it must be remembered that the animal as well as the plant possesses a certain mineral hunger. In other words, mineral substances play a double rôle in animal and plant nutrition: First, they may serve as real foods, necessary to the formation and nutrition of the tissues. In the animal economy this is especially true of phosphoric acid and lime. In the second place, they are necessary to the functional activity of the various organs of the body, irrespective of any part they may take in direct nutrition.

The necessity of saline solutions in the blood is known to every physician and physiologist. If the blood were deprived of all of its saline constituents the circulation would be impeded, restricted, or stopped, and death would result. In cases of collapse in disease saline injections in the blood are often used as a restorative measure. These salts in solution stimulate the heart's action and undoubtedly are active in the osmotic operations of the cells. This is one of the facts which show the intimate relation existing between physical chemistry and physiology.

Common salt is the most frequent and most abundant of the saline constituents of the blood, but the alkalinity of the blood is not due of course to common salt, which is a neutral substance. The existence of alkaline carbonates or other alkaline salts is necessary to the vital functions. While it is true that the digestion in the stomach takes place in an acid solution, it is likewise true that any excessive acid must be neutralized and enough of alkali added in the small intestine in order that the further digestion of the food may properly take place. That saline bodies other than common salt or the alkaline carbonates may be useful, however, in the performance of the vital functions can not be denied, though it might be difficult to demonstrate their absolute necessity. Hence the introduction of saline bodies, which may or may not be of an antiseptic character, may, within certain limits, have a favorable influence upon health and digestion. At the same time it should not be forgotten that all excess of such bodies imposes upon the excretory organs an additional burden, which, while it might not impair their efficiency even for a number of years, might finally produce a condition of exhaustion which would be followed by

serious consequences. Especially is this remark true of the kidneys, which appear to be a general clearing house for all the surplus of saline matters ingested in the foods.

THE ARGUMENT DE MINIMIS.

It is admitted by all who have examined the subject in a critical way, even by the users of preservatives, that in certain maximum quantities the limit of toleration is reached in each individual and positive injury is done, but it is also well recognized that many, if not all, of the usual foods when used in large excess produce injurious results. The many cases of disease produced by overeating, or by eating improperly prepared or poorly cooked foods, or by eating at unusual times are illustrations of this fact. Upon this basis and upon the further statement that when used in extremely small quantities the preservatives in question can not be regarded as harmful is founded the principal argument in favor of the use of the preservatives, aside from the fact that the foods themselves are kept in a better and more wholesome state.

It is only proper to give to this argument full consideration and not to brush it aside as illogical and irrelevant. It is evident that any attempt to determine experimentally the effect of extremely minute quantities of any preservative, even when used continuously, would not be likely to lead to any definite result. In the foregoing data we have illustrations of the fact that even large quantities of the preservatives employed—larger by far than would probably ever be found in any food product—do not always act in such a way as to permit of definite interpretation. The claim, therefore, that the use of such preservatives is justified when the amount is extremely small, and when even these small amounts are used only at intervals and not continuously, is worthy of careful consideration.

An illustration which is pertinent may be taken from the particular preservatives with which the foregoing experiments have been made, namely, boric acid and borax. One of the food products to which these preservatives are very commonly added is butter. This statement should not be taken to imply that in butter prepared for domestic use in this country borax is found to any considerable extent. When butter, however, is to be transported over long distances and necessarily kept a long while, the addition of borax is very frequently practiced.

The dietetic data which have been accumulated in the course of this experiment show that the quantity of butter consumed daily varies from 30 to 70 grams. Suppose, as a maximum, we say that the quantity of butter consumed in any one case daily is 100 grams, and that it contains 1 gram of boric acid or an amount of borax equivalent thereto. The maximum quantity of boric acid used in a day in this

case would be 1 gram. In point of fact, however, it would rarely if ever reach this amount, but even in those cases where butter is eaten freely probably half a gram would be about the maximum quantity consumed. Further than this, 1 per cent of boric acid or its equivalent of borax in butter is a very large quantity. Probably as a rule not more than one-half of 1 per cent is employed. In this case the quantity of boric acid likely to be consumed by any one individual in a day would be reduced to one-quarter of a gram.

In the case of meats preserved by borax, although larger quantities are eaten than of butter, it is not likely that any larger quantities of borax would be consumed. Thus it appears that those who habitually eat butter and meat preserved with borax might be consuming a half a gram or a little more of boric acid per day. But preserved meats are not regularly eaten, and hence the quantity mentioned is likely to be overestimated. It would be unwise to affirm in a case of this kind, in the light of the data obtained by the experiments, that such a minimum consumption of borax, especially when not continuous, would prove deleterious within any reasonable time of observation. The question then arises: Does the absence of such proof or the impracticability of obtaining it serve as a justifiable excuse for the use of this preservative?

This question ought not to be decided alone, because the principle of the decision must stand, not only for boric acid and borax, but for every preservative used in foods. In other words, whatever principle is established for judgment as to the use of boric acid in small portions must also be applied to the use of every other preservative used in foods. The principle must also be still further extended, so that whatever may be established as regards butter or meat must be admitted in respect of every other substance used as food. Hence before admitting the full force of the argument *de minimis* the full significance of such an admission must be considered and the practically unlimited extent of its application acknowledged.

This leads to the discussion of the fact that in the majority of cases the labor of freeing the system from added preservatives falls principally upon the kidneys. In the method of life in vogue in this country the kidneys are already hard-worked organs. Americans probably eat more freely than the citizens of almost any other country, with the possible exception of England. Large quantities of nitrogenous foods are consumed. In the breaking down of the nitrogenous tissues the kidneys are the chief organs for the excretion of the débris. The addition of any further burden, therefore, no matter how minute, is to be deplored. If, however, the principle be admitted that injurious substances may be used in such small quantities as to be practically harmless, then we find the way open for loading upon the kidneys many different functions in addition to those which they now discharge.

If they may be justly called upon to eliminate the small quantities of boric acid added in food, they can not logically be freed from the necessity of eliminating also minute quantities of salicylic acid, saccharin, sulphurous acid, and sulphites, together with the whole list of the remaining preservatives, which are eliminated principally through the kidneys. It would be useless to contend that the occasional consumption of small quantities of boric acid in a sausage, in butter, or in preserved meat would produce even upon delicate stomachs any continuing deleterious effect which could be detected by any of the means at our disposal; but naturally it seems that this admission does not in any way justify the indiscriminate use of this preservative in food products, implying, as it would, the equal right of all other preservatives of a like character to exist in food products without restriction.

It appears, therefore, that there is no convincing force in the argument *de minimis* unless it can be established that there is only a single preservative used in foods, that this preservative is used in only a few foods, that it will be consumed in extremely minute quantities, and that the foods in which it is found are consumed at irregular intervals and in small amounts. On the other hand, the logical conclusion which seems to follow from the data at our disposal is that the use of boric acid and equivalent amounts of borax should be restricted to those cases where the necessity therefor is clearly manifest, and where it is demonstrable that other methods of food preservation are not applicable and that without the use of such a preservative the deleterious effects produced by the foods themselves, by reason of decomposition, would be far greater than could possibly come from the use of the preservative in minimum quantities. In these cases it would also follow, apparently, as a matter of public information, and especially for the protection of the young, the debilitated, and the sick, that each article of food should be plainly labeled and branded in regard to the character and quantity of the preservative employed.

De minimis non curat lex is a legal phrase which may be capable of more than one construction. In the light of the above discussion it may be said that its proper interpretation would be by the phrase, "The law does not excuse the use of injurious substances because they may be present in small quantities."

EFFECT OF BORIC ACID AND BORAX UPON GENERAL HEALTH.

The most interesting of the observations which were made during the progress of the experiments was in the study of the direct effect of boric acid and borax, when administered in food, upon the health and digestion. When boric acid, or its equivalent in borax, is taken into the food in small quantities, not exceeding half a gram (7½ grains) a

day, no notable effects are immediately produced. The medical symptoms of the cases, in long-continued exhibitions of small doses or in large doses extending over a shorter period, show in many instances a manifest tendency to diminish the appetite and to produce a feeling of fullness and uneasiness in the stomach, which in some cases results in nausea, with a very general tendency to produce a sense of fullness in the head, which is often manifested as a dull and persistent headache. In addition to the uneasiness produced in the region of the stomach there appear in some instances sharp and well-located pains, which, however, are not persistent. Although the depression in the weight of the body and some of the other symptoms produced persist in the after periods, there is a uniform tendency manifested after the withdrawal of the preservative toward the removal of the unpleasant sensations in the stomach and head above mentioned.

The administration of boric acid to the amount of 4 or 5 grams per day or borax equivalent thereto continued for some time results in most cases in loss of appetite and inability to perform work of any kind. In many cases the person becomes ill and unfit for duty. Four grams per day may be regarded, then, as the limit of exhibition beyond which the normal man may not go. The administration of 3 grams per day produced the same symptoms in many cases, although it appeared that a majority of the men under observation were able to take 3 grams a day for a somewhat protracted period and still perform their duties. They commonly felt injurious effects from the dose, however, and it is certain that the normal man could not long continue to receive 3 grams per day.

In many cases the same results, though less marked, follow the administration of borax to the extent of 2 grams and even of 1 gram per day, although the illness following the administration of borax and boric acid in those proportions may be explained in some cases by other causes, chiefly grippe.

The administration of borax and boric acid to the extent of one-half gram per day yielded results markedly different from those obtained with larger quantities of the preservatives. This experiment, Series V, conducted as it was for a period of fifty days, was a rather severe test, and it appeared that in some instances a somewhat unfavorable result attended it. On the whole, the results show that one-half gram per day is too much for the normal man to receive regularly. On the other hand, it is evident that the normal man can receive one-half gram per day of boric acid, or of borax expressed in terms of boric acid, for a limited period of time without much danger of impairment of health.

It is, of course, not to be denied that both borax and boric acid are recognized as valuable remedies in medicine. There are certain dis-

cases in which these remedies are regularly prescribed for both internal and external use. The value which they possess in these cases does not seem to have any relation to their use in the healthy organism except when properly prescribed as prophylactics. The fact that any remedy is useful in disease does not appear to logically warrant its use at any other time.

It appears, therefore, that both boric acid and borax, when continuously administered in small doses for a long period or when given in large quantities for a short period, create disturbances of appetite, of digestion, and of health.

APPENDIX.

TABLES SHOWING BALANCES OF FOOD ELEMENTS.

EXPLANATION.

The sheets on which the balances of nitrogen, phosphoric acid, fat, calories, and solids were calculated are printed in full. The nitrogen sheets, for example, include the number of grams of nitrogen per day in the food consumed and the number of grams eliminated in the feces and in the urine, the figures being taken from sheets on which they have been previously calculated from the weights and the percentage composition. From these figures data are calculated for the succeeding columns, which show the percentages of nitrogen eliminated in the feces, in the urine, and in both, and also the balance between the quantity of nitrogen ingested and the quantity excreted. For the convenience of calculators the columns are numbered at the top, and just below the heading the necessary calculation is indicated in parentheses. For instance, column 4 is calculated by adding together the corresponding figures of columns 2 and 3; column 5 by dividing the figures in column 2 by those in column 1; while the balances in column 8 are obtained by subtracting the results in column 4 from those in column 1. Exceptions to the general method of calculation are the total and the average in column 4, which are not obtained by adding together the totals and averages respectively in columns 2 and 3. The total in column 4 is obtained by adding together the various individual figures in the same column, and the average by dividing the total by the corresponding number of days. The sheets for phosphoric acid, fat, calories, and solids are similarly arranged.

For various reasons it sometimes happened that a sample of urine or feces of an individual for a single day was lost. This was sometimes occasioned by the breakage of a receptacle, sometimes by sickness of a member of the table, sometimes by accident in the analytical work. As the work progressed and was better systematized these losses of samples became less frequent.

In order to secure all possible data the analysis of the food and feces is given, even for those days for which the sample of urine was lost, and the analysis of food and urine for those days on which the sample of feces was lost. In the first case, however, the amount of nitrogen, phosphoric acid, fat, calories of combustion, or solids of the food and of the feces is placed in brackets. In the second case, in which the sample of feces was lost, the grams of nitrogen, etc., in the food and in the urine are placed in parentheses. The figures given without either brackets or parentheses therefore represent those days for which the analysis of food, feces, and urine was complete.

In the totals of each period and subperiod it was desired to have as full information as possible. In determining the amount of nitrogen, etc., eliminated in both feces and urine of course only those figures could be employed which were not inclosed in either brackets or parentheses; that is, for those days for which both feces and urine were entirely saved and examined. For the total amount of nitrogen, etc., in the feces alone for a given period or subperiod, however, not only are the uninclosed figures added together, but also those inclosed in brackets are included, and for comparison with them the amount of nitrogen, etc., in food for the same

days is determined; that is, the figures in the first column which are neither in brackets nor in parentheses are added to the figures in brackets. In order to determine the total nitrogen eliminated in the urine the figures for those days for which both the feces and urine were all saved and examined are added to those in which the urine was saved but the feces lost; that is, the figures which are neither in brackets nor parentheses are added to the figures in parentheses. For comparison with them the amount of nitrogen, etc., in food for the corresponding days was also determined; that is, the figures in column 1 which are neither in brackets nor in parentheses are added to the figures in parentheses.

In Table XLV, for instance (subject No. 1, Series I), the number of grams of nitrogen in the food for the fore period (December 16–21, 1902), was 113.226. This figure includes the nitrogen in the food for December 16, when the sample of urine was lost. The nitrogen in the food for December 16 is therefore inclosed in brackets, and the sum of the nitrogen for all the days on which the feces were saved, in this case for all days of the period, is also inclosed in brackets. The same is true of column 2, in which the nitrogen of the feces is given. The urine and feces were both saved for all days of the period excepting December 16, and the sum of the nitrogen in the food for those days is given, and the result expressed in figures that are not inclosed in either brackets or parentheses.

The average amount of nitrogen, etc., in the food for each day on which both feces and urine were analyzed is determined by dividing the number which is not in parentheses, 94.948, by the number of days represented in this sum; that is, from December 17 to December 21, inclusive. The figure so obtained represents the average amount of nitrogen for one day of the period when both urine and feces were examined and is not placed in either brackets or parentheses. The average amount of nitrogen in the urine is of course obtained by dividing the total number of grams for the period by the same number of days.

On the other hand, the average number of grams of nitrogen in the food for each day on which the feces were collected and examined is obtained by dividing the sum in brackets, 113.226, by the total number of days on which the feces were saved, that is, from December 16 to December 21, inclusive, and the result so obtained is placed in brackets. The average number of grams per day of nitrogen in the feces is also obtained by dividing the number in brackets in the second column, 8.735, by the total number of days on which the feces were obtained; that is, from December 16 to December 21, inclusive.

The amount of nitrogen eliminated in both feces and urine is obtained, as directed in the table, by adding together the amount eliminated each day in the feces to the amount eliminated in the urine. To obtain this result the figures inclosed in parentheses and brackets are omitted. The amount eliminated in both feces and urine for a period or subperiod is determined by adding together the amount eliminated in both feces and urine for all individual days in that period or subperiod. This figure of course does not include any of the figures expressed in brackets and parentheses in columns 2 and 3. It is therefore not equal to the sum which includes those results; for instance, in the table referred to above (Table XLV) the total nitrogen eliminated in both feces and urine during the fore period refers only to the time from December 17 to December 21, inclusive, and is not equal to the sum of the amount of nitrogen eliminated in the feces (8.735 grams, which includes also the data for December 16) and the amount of the nitrogen in the urine for December 17 to 21 (76.880 grams). This applies also to the other case mentioned; that is, where the sample of feces is lost and the results on food and urine for the corresponding days are inclosed in parentheses.

The averages that would have been obtained by excluding all results for those days on which either feces or urine were lost would not have differed greatly from those

here given, but it was desired to make the report as full as possible and include as far as practicable all of the results obtained.

Great care must be taken to distinguish days on which the sample of feces was lost and days on which no movement of the bowels occurred. In the latter case no substance was lost, as the excrement would naturally be collected on a later date. An illustration of this is given under No. 2, for December 18, page 261. On this date no movement occurred, and yet it was included in the number of days on which feces are collected and analyzed; that is, the sum of the nitrogen in the feces for No. 2 during the fore period from December 16 to December 21, inclusive, was 8.080 grams. Since no sample was lost, the number of grams given is divided by 6 to obtain the average weight of nitrogen per day eliminated in the feces.

In order to bring together and average the results for all the men for each series and express them as a unit they were collected in summaries. The summary of the nitrogen data obtained in Series I is given on page 266. Here under each man the sums of each period are given, first, for the days on which both urine and feces were collected and analyzed (figures not inclosed either in brackets or in parentheses); second, for the days on which feces were lost, but urine was analyzed (figures inclosed in parentheses); and third, for the days on which urine was lost, but the feces were analyzed (figures inclosed in brackets).

The totals for all men for each period were obtained by adding together, first, the figures not inclosed in either brackets or parentheses; second, the figures inclosed in parentheses, and adding to them the figures not inclosed in either brackets or parentheses for those men for whom no figures in parentheses are given; third, by adding together all figures inclosed in brackets and adding to them all figures not inclosed in either brackets or parentheses for those men for whom no figures in brackets are given. To illustrate, in the summary for the fore period for Series I (p. 266), the number of grams of nitrogen in the food of all men for all days on which both feces and urine were saved and examined amounted to 566.765 grams. This sum was obtained by adding the following figures: 94.948, 89.778, 115.501, 84.465, 101.744, 80.329.

The number of grams of nitrogen in the food for those days on which feces were all recovered and analyzed was found by adding together all of the figures given above with the exception of 94.948 and 89.778 and adding to this result the figures expressed in brackets, that is, 113.226 and 105.085.

The number of grams of nitrogen in the food for all days on which the urine was recovered and analyzed was found by adding together the figures given above for those days on which both urine and feces were recovered, with the exception of 84.465, and adding to that sum the number of grams of nitrogen in the food of No. 4 for all days on which the urine alone was saved and analyzed, that is, 101.641.

In order to determine the average amount of nitrogen per day in the food for all days on which both urine and feces were recovered and analyzed it is necessary to turn to the individual balance sheets and count the days and use the number thus obtained to divide into the total number of grams in the food for those days. By referring to the individual balance sheets we note that both urine and feces were recovered and analyzed in the fore period for the following number of days: No. 1, five days; No. 2, five days; No. 3, six days; No. 4, five days; No. 5, six days; No. 6, six days, making a total of thirty-three days. Now, dividing 566.765 grams (that is, the amount of nitrogen in the food for all days on which the urine and feces were entirely recovered and analyzed) by this number of days, we have the result 17.17; that is, the average number of grams of nitrogen in the food for each man for each day of this period.

In the same way the number of days in the fore period on which the feces were collected and analyzed was: No. 1, six days; No. 2, six days; No. 3, six days; No. 4,

five days; No. 5, six days; No. 6, six days—in all thirty-five days. By referring to the total, it was seen that the nitrogen in the food consumed during the same time—that is, the figure in brackets—amounted to 600.350 grams. This divided by 35 gives 17.15 grams, or the average number of grams of nitrogen consumed by each person for each day on which the feces were collected and analyzed.

Applying the same principle to urine, the number of days on which the urine was saved in the fore period of the first series was: No. 1, five days; No. 2, five days; No. 3, six days; No. 4, six days; No. 5, six days; No. 6, six days, making in all thirty-four days. The number of grams of nitrogen consumed during the same time amounted to 583.941 (the figure given in parentheses). This divided by 34 gives 17.17 grams as the average amount of nitrogen consumed by each man for each day on which the urine was collected and analyzed.

In column 2 the numbers given for each man represent the nitrogen eliminated for all days on which the feces were analyzed, while the total and average are obtained just as in column 1, using the same number of days used in obtaining the bracketed average in the food column. Similarly, in column 3, the individual data represent all days on which the urine was analyzed, and the average is obtained by using the number of days used in obtaining the average in parentheses in the food column. The same principle applies to column 4, where the average is obtained in the same manner as the uninclosed average in column 1. In the percentage and balance columns the total and average results are obtained as indicated in the heading, using in each case the numbers on the same line in the corresponding columns.

This same principle applies to the statements regarding nitrogen, phosphoric acid, fat, calories, and solids for all experiments conducted. The same method of recording, collecting, and averaging was employed in all periods.

Now, still further to simplify the data and reduce not merely the results of one series to a single statement, but to reduce all the series to the same basis, tables combining the various summaries for the several series have been prepared. As an illustration of this, Table LV, on page 306, general summary of nitrogen balances, is cited. During the fore period of Series I, 566.765 grams of nitrogen were consumed on the days when the feces and urine were collected and analyzed, 600.350 grams were consumed on all days for which feces were collected and analyzed, and 583.941 grams of nitrogen were consumed on the days on which urine was collected and analyzed. During the fore periods of all series, 1,937.485 grams of nitrogen were consumed during the days on which both feces and urine were collected and analyzed. The corresponding number of days for all fore periods, obtained as indicated above, was 111. Dividing 1,937.485 by 111 gives 17.455 as the average number of grams of nitrogen consumed by each man during the fore periods of all series for each day on which both feces and urine were collected and analyzed. The corresponding results for all days on which feces were examined and for all days on which urine was examined are obtained in the same manner, using for the former the figures in brackets and for the latter the figures in parentheses.

It is to be noted that in the general summaries Series II has been omitted from the averages owing to the fact that all of the men were ill at the close of the preservative period and no after period was run. It was not desired to compare the averages of the fore periods and preservative periods of five series with the after periods of four series, and for that reason the results on Series II are omitted in the averages. At the same time the figures are given for the sake of comparison.

NITROGEN TABLES.

TABLE XLV.—*Nitrogen balances for Series I.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	[18.278]	[1.878]	....	....	[10.3]	....	....	....	....
17	17.194	1.091	14.514	15.60	6.3	84.4	90.7	+ 1.59	....
18	19.291	1.020	15.036	16.06	5.3	77.9	83.2	+ 3.23	....
19	18.964	1.590	14.960	16.55	8.4	78.9	87.3	+ 2.41	....
20 21	19.704 19.795	1.754 1.402	32.370	35.53	8.0	82.0	90.0	+ 3.97	....
Total	94.948 [113.226]	.... [8.735]	76.880	83.74	.... [7.7]	81.0	88.2	+11.20	....
Average	18.990 [18.871]	.... [1.456]	15.376	16.75	....	....	....	+ 2.24	....
Preservative period.									
First subperiod:									
1902—Dec. 22	19.213	1.486	16.00	17.49	7.7	83.2	91.0	+ 1.72	1.0
23	17.710	1.105	14.52	15.62	6.2	82.0	88.2	+ 2.09	1.0
24	16.430	1.361	16.51	17.87	8.3	100.5	108.8	− 1.44	1.0
25	19.030	1.366	15.73	17.10	7.2	82.7	89.9	+ 1.93	1.0
26	20.030	1.042	15.11	16.15	5.2	75.4	80.6	+ 3.88	1.0
Total	92.413	6.360	77.87	84.23	6.8	84.3	91.1	+ 8.18	5.0
Average	18.483	1.272	15.57	16.85	....	....	....	+ 1.63	....
Second subperiod:									
1902—Dec. 27	19.77	2.145	18.04	20.18	10.8	91.2	102.0	− 0.41	2.0
28	19.97	1.860	15.12	16.98	9.3	75.7	85.0	+ 2.99	2.0
29	19.79	1.118	17.30	18.42	5.6	87.4	93.0	+ 1.37	2.0
30	(20.71)	Lost.	(17.36)	....	....	(83.8)	....	....	2.0
Total	59.53 (80.24)	5.123	.... (67.82)	55.58	8.6	.... (84.5)	93.4	+ 3.95	8.0
Average	19.84 (20.06)	1.708	.... (16.96)	18.53	....	....	....	+ 1.31	....
Third subperiod:									
1902—Dec. 31	19.29	1.305	14.28	15.58	6.8	74.0	80.8	+ 3.71	3.0
1903—Jan. 1	19.01	.628	16.52	17.15	3.3	86.9	90.2	+ 1.86	3.0
2	15.19	1.224	15.05	16.27	8.1	99.0	107.1	− 1.08	3.0
3	15.28	1.058	17.86	18.92	6.9	116.9	123.8	− 3.64	3.0
Total	68.77	4.215	63.71	67.92	6.1	92.6	98.7	+ .85	12.0
Average	17.19	1.054	15.93	16.98	....	....	....	+ .21	....
Entire preservative period:									
Total	220.713 (241.423)	15.698	.... (209.40)	207.73	7.1	.... (86.7)	94.1	+12.98	25.0
Average	16.978 (18.571)	1.308	.... (16.11)	17.31	....	....	....	− .33	....
After period.									
1903—Jan. 4	21.47	1.296	14.98	16.28	6.0	69.8	75.8	+ 5.19	....
5	21.54	1.208	17.37	18.58	5.6	80.6	86.2	+ 2.96	....
6	20.77	1.878	17.54	19.42	9.0	84.5	93.5	+ 1.35	....
7	22.38	1.736	15.79	17.53	7.8	70.5	78.3	+ 4.85	....
8	18.92	2.374	18.19	20.56	12.5	96.1	108.6	− 1.64	....
9	(19.90)	Broken.	(15.68)	....	....	(78.8)	....	....	....
10	18.86	1.143	18.04	19.18	6.1	95.6	101.7	− .32	....
11	16.86	1.379	14.78	16.16	8.2	87.7	95.9	+ .70	....
12	19.02	1.506	19.27	20.78	7.9	101.3	102.2	− 1.76	....
13	18.79	2.210	10.69	12.90	11.8	56.9	68.7	+ 5.89	....
Total	178.61 (198.51)	14.730	.... (162.33)	161.39	8.2	.... (81.8)	90.3	+17.22	....
Average	17.86 (19.85)	1.473	.... (16.23)	16.14	....	....	....	+ 1.91	....

TABLE XLV.—*Nitrogen balances for Series I*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	[15.307]	[1.399]	....	....	[9.1]	....	....	....	....
17	16.666	1.566	14.57	16.14	9.4	87.4	96.8	+ 0.53	....
18	16.765	(a)	14.49	14.49	....	86.4	86.4	+ 2.28	....
19	18.963	2.169	14.98	17.15	11.4	79.0	90.4	+ 1.81	....
20	19.147	1.524	} 30.95	33.90	7.9	82.8	90.7	+ 3.48	....
21	18.237	1.422							
Total {	89.778	....	74.99	81.68	....	83.5	91.0	+ 8.10	....
	[105.085]	[8.080]	....	....	[7.7]	....	....	....	....
Average {	17.956	....	15.00	16.34	....	....	....	+ 1.62	....
	[17.511]	[1.347]	....	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1902—Dec. 22	20.049	2.305	12.58	14.88	11.5	62.7	74.2	+ 5.169	1.0
23	16.77	1.635	16.17	17.80	9.7	96.4	106.1	− 1.03	1.0
24	17.51	1.553	16.38	17.93	8.9	93.5	102.4	− .42	1.0
25	15.95	1.717	14.28	16.00	10.8	89.5	100.3	− .05	1.0
26	18.93	1.777	14.84	16.62	9.4	78.4	87.8	+ 2.31	1.0
Total	89.21	8.987	74.25	83.23	10.1	83.2	93.3	+ 5.98	5.0
Average	17.84	1.797	14.85	16.65	....	....	....	+ 1.20	....
Second subperiod:									
1902—Dec. 27	18.55	1.886	15.82	17.71	10.2	85.3	95.5	+ 0.84	2.0
28	18.34	2.767	13.20	15.97	15.1	72.0	87.1	+ 2.37	2,0
29	19.74	1.743	15.56	17.30	8.8	78.8	87.6	+ 2.44	2.0
30	18.55	1.374	15.01	16.38	7.4	80.9	88.3	+ 2.17	2.0
Total	75.18	7.770	59.59	67.36	10.3	79.3	89.6	+ 7.82	8.0
Average	18.80	1.942	14.90	16.84	....	....	....	+ 1.96	....
Third subperiod:									
1902—Dec. 31	19.27	2.140	15.28	17.42	11.1	79.3	90.4	+ 1.85	3.0
1903—Jan. 1	19.92	2.025	11.62	13.65	10.2	58.3	68.5	+ 6.27	3.0
2	19.67	1.134	16.35	17.48	5.8	83.1	88.9	+ 2.19	3.0
3	18.48	1.886	12.22	14.11	10.2	66.2	76.4	+ 4.37	3.0
Total	77.34	7.185	55.47	62.66	9.3	71.7	81.0	+14.68	12.0
Average	19.34	1.796	13.87	15.66	....	....	....	+ 3.68	....
Entire preservative period:									
Total	241.73	23.942	189.31	213.25	9.9	78.3	88.2	+28.48	25.0
Average	18.59	1.842	14.56	16.40	....	....	....	+ 2.19	....
After period.									
1903—Jan. 4	15.43	0.836	11.66	12.50	5.4	75.6	81.0	+ 2.93	....
5	18.76	1.438	13.78	15.22	7.6	73.5	81.1	+ 3.54	....
6	17.62	1.674	15.77	17.44	9.5	89.5	99.0	+ .18	....
7	19.36	.964	14.48	15.44	5.0	74.8	79.8	+ 3.92	....
8	16.56	1.738	14.09	15.83	10.5	85.1	95.6	+ .73	....
9	18.45	1.556	14.80	16.36	8.4	80.3	88.7	+ 2.09	....
10	19.44	1.846	15.84	17.69	9.5	81.5	91.0	+ 1.75	....
11	17.82	2.963	14.25	17.21	16.6	80.0	96.6	+ .61	....
12	19.50	1.431	13.70	15.13	7.3	70.3	77.6	+ 4.37	....
13	18.55	1.437	18.72	20.16	7.7	100.9	108.6	− 1.61	....
Total	181.49	15.883	147.09	162.98	8.8	81.0	89.8	+18.51	....
Average	18.15	1.588	14.71	16.30	....	....	....	+ 1.85	....

[a] No movement.

TABLE XLV.—*Nitrogen balances for Series I*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1).	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	18.176	1.599	14.75	16.35	8.8	81.2	90.0	+ 1.83	....
17	17.557	2.667	9.27	11.94	15.2	52.8	68.0	+ 5.62	....
18	19.660	1.263	11.74	13.00	6.4	59.7	66.1	+ 6.66	....
19	19.731	.789	16.57	17.36	4.0	84.0	88.0	+ 2.37	....
20	22.741	1.913	27.06	29.53	6.1	67.0	73.0	+10.85	....
21	17.636	.556							....
Total	115.501	8.787	79.39	88.18	7.6	68.7	76.3	+27.33	....
Average	19.250	1.464	13.23	14.70	....	....	....	+ 4.55	....
Preservative period.									
First subperiod:									
1902—Dec. 22	19.68	2.617	15.05	17.67	13.3	76.5	89.8	+ 2.01	1.0
23	16.64	1.547	9.68	11.23	9.3	58.2	67.5	+ 5.41	1.0
24	15.81	1.256	14.28	15.54	7.9	90.3	98.3	+ .27	1.0
25	15.59	.719	17.08	17.80	4.6	109.6	114.2	− 2.21	1.0
26	[15.98]	[1.541]	Lost.	....	[9.6]	....	....	....	1.0
Total	67.72	....	56.09	62.24	....	82.8	91.9	+ 5.48	5.0
	[83.70]	[7.680]	....	....	[9.2]	....	....	....	
Average	16.93	....	14.02	15.56	....	....	....	+ 1.37	....
	[16.74]	[15.360]	....	....	....	....	....	....	....
Second subperiod:									
1902—Dec. 27	18.56	1.867	13.88	15.75	10.1	74.8	84.9	+ 2.81	2.0
28	16.24	1.881	13.52	15.40	11.6	83.3	94.8	+ .84	2.0
29	19.35	1.653	12.78	14.43	8.5	66.0	74.6	+ 4.92	2.0
30	16.76	.595	11.93	12.52	3.6	71.2	74.7	+ 4.24	2.0
Total	70.91	5.996	52.11	58.10	8.5	73.5	81.9	+12 81	8.0
Average	17.73	1.499	13.03	14.52	....	....	....	+ 3.21	....
Third subperiod:									
1902—Dec. 31	19.47	2.733	11.09	13.82	14.0	57.0	71.0	+ 5.65	3.0
1903—Jan. 1	12.85	1.425	15.08	16.50	11.1	117.4	128.4	− 3.65	7.0
2	12.63	.872	11.40	12.27	6.9	90.3	97.1	+ .36	2.0
3	16.54	1.305	12.01	13.32	7.9	72.6	80.5	+ 3.22	2.5
Total	61.49	6.335	49.58	55.91	10.3	80.6	90.9	+ 5.58	14.5
Average	15.37	1.584	12.40	13.98	....	....	....	+ 1.39	....
Entire preservative period:									
Total	200.12	....	157.78	176.25	....	78.8	88.1	+23.87	27.5
	[216.10]	[20.011]	....	....	[9.3]	....	....	....	....
Average	15.39	....	12.14	13.56	....	....	....	+ 1.83	....
	[16.62]	[1.539]	....	....	....	....	....	....	....
After period.									
1903—Jan. 4	15.14	1.775	11.66	13.44	11.7	77.0	88.8	+ 1.70	....
5	18.51	.594	12.88	13.47	3.2	69.6	72.8	+ 5.04	....
6	17.95	.806	13.49	14.30	4.5	75.2	79.7	+ 3.65	....
7	19.49	2.271	14.14	16.41	11.7	72.6	84.2	+ 3.08	....
8	16.99	1.343	12.48	13.82	7.9	73.5	81.3	+ 3.17	....
9	17.33	1.049	13.68	14.73	6.1	78.9	85.0	+ 2.60	....
10	18.16	2.225	13.89	16.12	12.3	76.5	88.8	+ 2.04	....
11	14.43	1.053	11.32	12.37	7.3	78.4	85.7	+ 2.06	....
12	19.13	1.720	13.11	14.83	9.0	68.5	77.5	+ 4.30	....
13	17.62	.437	14.62	15.06	2.5	83.0	85.5	+ 2.56	....
Total	174.75	13.273	131.27	144.55	7.6	75.1	82.7	+30.20	....
Average	17.48	1.327	13.13	14.46	....	....	....	+ 3.02	....

Table XLV.—*Nitrogen balances for Series I*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	17.139	0.942	13.62	14.56	5.5	79.5	85.0	+ 2.58	....
17	(17.176)	Lost.	(13.22)	....	....	(77.0)	....	....	....
18	19.439	1.353	13.14	14.49	7.0	67.6	74.5	+ 4.95	....
19	17.970	1.453	14.06	15.51	8.1	78.2	86.3	+ 2.46	....
20	17.303	1.280	25.49 (20–21)	28.82	11.1	85.2	96.3	+ 1.10	....
21	12.614	2.045							
Total	84.465 (101.641)	7.073	.... (79.53)	73.38	8.4	.... (78.2)	86.9	+11.08	....
Average	16.893 (16.940)	1.415	.... (13.26)	14.68	....	....	....	+ 2.21	....
Preservative period.									
First subperiod:									
1902—Dec. 22	18.237	0.996	16.72	17.72	5.5	91.7	97.2	+ 0.52	1.0
23	15.38	1.652	15.26	16.91	10.7	99.2	109.9	− 1.53	1.0
24	16.29	1.021	14.53	15.55	6.3	89.2	95.5	+ .74	1.0
25	15.69	1.369	16.24	17.61	8.7	103.5	112.2	− 1.92	1.0
26	18.64	2.156	15.12	17.28	11.6	81.1	92.7	+ 1.36	1.0
Total	84.237	7.194	77.87	85.07	8.5	92.4	101.0	− .833	5.0
Average	16.847	1.439	15.57	17.01	....	....	....	− .163	....
Second subperiod:									
1902—Dec. 27	19.01	1.476	14.54	16.02	7.8	76.5	84.3	+ 2.99	2.0
28	17.31	1.763	14.47	16.23	10.2	83.6	93.8	+ 1.08	2.0
29	19.45	1.560	15.36	16.92	8.0	79.0	87.0	+ 2.53	2.0
30	18.73	1.481	14.04	15.52	7.9	75.0	82.9	+ 3.21	2.0
Total	74.50	6.280	58.41	64.69	8.4	78.4	86.8	+ 9.81	8.0
Average	18.62	1.570	14.60	16.17	....	....	....	+ 2.45	....
Third subperiod:									
1902–Dec. 31	30.09	1.710	15.78	17.49	5.7	52.6	58.3	+12.51	3.0
1903–Jan. 1	10.31	.932	12.18	13.11	9.0	118.1	127.2	− 2.80	1.0
2	17.23	1.234	15.52	16.75	7.2	90.1	97.2	+ .48	3.0
3	14.09	.902	12.00	12.90	6.4	85.2	91.6	+ 1.19	2.5
Total	71.63	4.778	55.48	60.25	6.7	77.5	84.1	+11.38	9.5
Average	17.91	1.194	13.87	15.06	....	....	....	+ 2.85	....
Entire preservative period:									
Total	230.367	18.252	191.76	210.01	7.9	83.2	91.2	+20.36	22.5
Average	17.721	1.404	14.75	16.15	....	....	....	+ 1.57	....
After period.									
1903—Jan. 4	11.29	1.326	10.21	11.54	11.7	90.4	102.2	− 0.25	....
5	15.16	1.016	12.28	13.30	6.7	81.0	87.7	+ 1.86	....
6	13.90	1.330	12.34	13.67	9.6	88.8	98.3	+ .23	....
7	15.42	1.244	12.21	13.45	8.1	79.2	87.2	+ 1.97	....
8	14.32	1.411	11.54	12.95	9.9	80.6	90.4	+ 1.37	....
9	13.49	2.092	11.59	13.68	15.5	85.9	101.4	− .19	....
10	13.55	.954	11.83	12.78	7.0	87.3	94.3	+ .77	....
11	14.61	1.298	11.86	13.16	8.9	81.2	90.1	+ 1.45	....
12	16.21	2.249	13.70	15.95	13.9	84.5	98.4	+ .26	....
13	15.99	2.332	11.63	13.96	14.6	72.7	87.3	+ 2.03	....
Total	143.94	15.252	119.19	134.44	10.6	82.8	93.4	+ 9.50	....
Average	14.39	1.52	11.92	13.44	....	....	....	+ .95	....

TABLE XLV.—*Nitrogen balances for Series I*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	15.443	0.948	12.642	13.59	6.1	81.9	88.0	+ 1.85	....
17	14.391	1.496	11.64	13.14	10.4	80.9	91.3	+ 1.25	....
18	17.831	1.643	12.80	14.44	9.2	71.8	81.0	+ 3.39	....
19	17.167	2.038	13.06	15.10	11.9	76.1	88.0	+ 2.07	....
20	17.421	2.435	28.10	32.11	10.9	76.1	87.0	+ 4.80	....
21	19.491	2.573							
Total	101.744	10.133	78.242	88.38	10.0	76.9	86.9	+13.36	....
Average	16.957	1.689	13.040	14.73	....	....	....	+ 2.22	....
Preservative period.									
First subperiod:									
1902—Dec. 22	(15.79)	Broken.	(13.20)	....	....	(83.6)	....	....	1.0
23	17.71	1.953	13.95	15.90	11.0	78.8	89.8	+ 1.81	1.0
24	(16.59)	Lost.	(13.35)	....	....	(80.5)	....	....	1.0
25	16.90	2.074	13.42	15.49	12.3	79.4	91.7	+ 1.41	1.0
26	18.49	1.325	13.31	14.64	7.2	72.0	79.2	+ 3.85	1.0
Total	53.10	5.352	....	46.03	10.1	....	86.7	+ 7.07	5.0
	(85.48)	....	(67.23)	....	....	(78.6)	....	....	
Average	17.70	1.784	....	15.34	....	....	....	+ 2.36	....
	(17.10)	....	(13.45)	....	....	....	....	....	....
Second subperiod:									
1902—Dec. 27	18.13	1.989	13.36	15.35	11.0	73.7	84.7	+ 2.78	2.0
28	18.96	2.358	12.77	15.13	12.4	67.4	79.8	+ 3.83	2.0
29	19.28	1.753	16.24	17.99	9.1	84.2	93.3	+ 1.29	2.0
30	20.48	2.001	12.88	14.88	9.8	62.9	72.7	+ 5.60	2.0
Total	76.85	8.101	55.25	63.35	10.5	71.9	82.4	+13.50	8.0
Average	19.21	2.025	13.81	15.84	....	....	....	+ 3.37	....
Third subperiod:									
1902—Dec. 31	18.33	2.962	17.96	20.92	16.2	98.0	114.1	− 2.59	3.0
Jan. 1	22.59	2.264	12.96	15.22	10.0	57.4	67.4	+ 7.37	3.0
2	16.88	2.009	13.66	15.67	11.9	80.9	92.8	+ 1.21	3.0
3	16.52	1.804	13.79	15.59	10.9	83.5	94.4	+ .93	3.0
Total	74.32	9.039	58.37	67.40	12.2	78.5	90.7	+ 6.92	12.0
Average	18.58	2.260	14.59	16.85	....	....	....	+ 1.73	....
Entire preservative period:									
Total	204.27	22.492	....	176.49	11.0	....	86.4	+27.49	25.0
	(236.65)	....	(180.85)	....	....	(76.4)	....	....	
Average	18.57	2.04	....	16.04	....	....	....	+ 2.53	....
	(18.20)	....	(13.91)	....	....	....	....	....	....
After period.									
1903—Jan. 4	19.04	1.421	13.46	14.88	7.5	70.7	78.2	+ 4.16	....
5	18.16	3.062	19.26	22.32	16.9	106.1	122.9	− 4.16	....
6	19.34	3.248	13.45	16.70	16.8	69.5	86.3	+ 2.64	....
7	19.88	1.472	13.11	14.58	7.4	65.9	73.3	+ 5.30	....
8	17.05	2.302	13.52	15.82	13.5	79.3	92.8	+ 1.23	....
9	17.69	1.316	13.73	15.05	7.4	77.6	85.1	+ 2.64	....
10	[17.52]	[1.647]	(a)	....	[9.4]	....	....	....	....
11	16.80	1.903	13.54	15.44	11.3	80.6	91.9	+ 1.36	....
12	16.38	1.422	12.53	13.95	8.7	76.5	85.2	+ 2.43	....
13	16.58	1.252	15.55	16.80	7.6	93.8	101.3	− .22	....
Total	160.92	....	128.15	145.54	....	79.6	90.4	+15.38	....
	[178.44]	[19.045]	....	....	[10.6]	....	....	....	....
Average	17.88	....	14.24	16.17	....	....	....	+ 1.71	....
	[17.84]	[1.904]	....	....	....	....	....	....	....

(a) Not complete.

TABLE XLV.—*Nitrogen balances for Series I*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	12.442	2.933	12.2400	15.173	23.6	98.3	121.9	− 2.731	....
17	14.521	(*a*)	12.3200	12.320	....	84.8	84.8	+ 2.201	....
18	14.349	1.209	11.9350	13.144	8.4	83.2	91.6	+ 1.201	....
19	14.167	2.101	12.5400	14.641	14.8	88.5	103.3	− .474	....
20	10.217	2.116	21.9240	26.070	16.7	88.2	104.9	− 1.220	....
21	14.633	2.030							....
Total	80.329	10.389	70.9590	81.348	12.9	83.3	101.2	− 1.019	....
Average	13.388	1.732	11.8265	13.558	....	....	....	− .170	....
Preservative period.									
First subperiod:									
1902—Dec. 22	14.73	3.018	12.70	15.72	20.5	86.2	106.7	− 0.99	1.0
23	12.61	(*a*)	12.48	12.48	....	99.0	99.0	+ .13	1.0
24	9.90	1.572	11.36	12.93	15.9	114.7	130.6	− 3.03	1.0
25	13.71	1.978	12.16	14.14	14.4	88.7	103.1	− .43	1.0
26	....	Lost.	Lost.	....	....	....	....	....	1.0
Total	50.95	6.568	48.70	55.27	12.9	95.6	108.5	− 4.32	5.0
Average	12.74	1.642	12.18	13.82	....	....	....	− 1.08	....
Second subperiod:									
1902—Dec. 27	15.46	(*a*)	9.46	9.46	....	61.2	61.2	+ 6.00	2.0
28	13.93	2.299	15.80	18.10	16.5	113.4	129.9	− 4.17	2.0
29	16.53	2.678	12.48	15.16	16.2	75.5	91.7	+ 1.37	2.0
30	13.87	1.271	12.17	13.44	9.2	87.7	96.9	+ .43	2.0
Total	59.79	6.248	49.91	56.16	10.4	83.5	93.9	+ 3.63	8.0
Average	14.95	1.562	12.48	14.04	....	....	....	+ .91	....
Third subperiod:									
1902—Dec 31	9.84	2.064	12.42	14.48	21.0	126.2	147.2	− 4.64	3.0
1903—Jan. 1	10.74	2.551	10.99	13.54	23.8	102.3	126.1	− 2.80	3.0
2	9.85	1.913	10.92	12.83	19.4	110.9	130.3	− 2.98	3.0
3	8.10	1.544	6.73	8.27	19.1	83.0	102.1	− .17	3.0
Total	38.53	8.072	41.06	49.12	20.9	106.6	127.5	−10.59	12.0
Average	9.63	2.018	10.26	12.28	....	....	....	− 2.65	....
Entire preservative period:									
Total	149.27	20.876	139.67	160.55	13.9	93.6	107.6	−11.28	25.0
Average	12.44	1.740	11.64	13.38	....	....	....	....	....
After period.									
1903—Jan. 4	13.80	1.642	16.52	18.16	11.9	119.7	131.6	− 4.36	....
5	15.34	1.866	11.48	13.35	12.2	74.8	87.0	+ 1.99	....
6	12.45	2.047	12.01	14.05	16.4	96.5	112.9	− 1.60	....
7	16.89	1.863	14.54	16.40	11.0	86.1	97.1	+ .49	....
8	12.16	3.247	10.20	13.45	26.1	81.8	107.9	− .99	....
9	16.34	(*a*)	12.65	12.65	....	77.4	77.4	+ 3.69	....
10	16.22	2.281	10.60	12.88	14.1	65.3	79.4	+ 3.34	....
11	13.73	1.246	13.44	14.69	9.1	97.9	107.0	.96	....
12	14.28	1.304	9.08	10.38	9.1	63.5	72.6	+ 3.90	....
13	15.44	1.534	9.80	11.33	9.9	63.5	73.4	+ 4.11	....
Total	146.95	17.030	120.32	137.34	11.6	81.9	93.5	+ 9.61	....
Average	14.70	1.703	12.03	13.73	....	....	....	+ .97	....

a No movement.

TABLE XLVI.—*Summary of nitrogen balances for Series I.*

Six men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	94.948		76.880	83.74		81.0	88.2	+ 11.20	
	[113.226]	[8.735]			[7.7]				
No. 2	89.778		74.99	81.68		83.5	91.0	+ 8.10	
	[105.085]	[8.080]			[7.7]				
No. 3	115.501	8.787	79.39	88.18	7.6	68.7	76.3	+ 27.33	
No. 4	84.465	7.073		73.38	8.4		86.9	+ 11.08	
	(101.641)		(79.53)			(78.2)			
No. 5	101.744	10.133	78.242	88.38	10.0	76.9	86.9	+ 13.36	
No. 6	80.329	10.389	70.959	81.348	12.9	88.3	101.2	− 1.019	
Total	566.765			496.708			87.6	+ 70.057	
	(583.941)		(459.991)			(78.8)			
	[600.350]	[53.197]			[8.9]				
Average	17.17			15.05				+ 2.12	
	(17.17)		(13.53)						
	[17.15]	[1.520]							
Preservative period.									
First subperiod:									
No. 1	92.413	6.360	77.87	84.23	6.8	84.3	91.1	+ 8.18	5.0
No. 2	89.21	8.987	74.25	83.23	10.1	83.2	93.3	+ 5.98	5.0
No. 3	67.72		56.09	62.24		82.8	91.9	+ 5.48	5.0
	[83.70]	[7.680]			[9.2]				
No. 4	84.237	7.194	77.87	85.07	8.5	92.4	101.0	− .833	5.0
No. 5	53.10	5.352		46.03	10.1		86.7	+ 7.07	5.0
	(85.48)		(67.23)			(78.6)			
No. 6	50.95	6.568	48.70	55.27	12.9	95.6	108.5	− 4.32	5.0
Total	437.630			416.07			95.1	+ 21.56	30.0
	(470.010)		(402.01)			(85.5)			
	[453.610]	[42.141]			[9.3]				
Average	16.83			16.00				+ .83	
	(16.79)		(14.36)						
	[16.80]	[1.561]							
Second subperiod:									
No. 1	59.53	5.123		55.58	8.6		93.4	+ 3.95	8.0
	(80.24)		(67.82)			(84.5)			
No. 2	75.18	7.770	59.59	67.36	10.3	79.3	89.6	+ 7.82	8.0
No. 3	70.91	5.996	52.11	58.10	8.5	73.5	81.9	+ 12.81	8.0
No. 4	74.50	6.280	58.41	64.69	8.4	78.4	86.8	+ 9.81	8.0
No. 5	76.85	8.101	55.25	63.35	10.5	71.9	82.4	+ 13.50	8.0
No. 6	59.79	6.248	49.91	56.16	10.4	83.5	93.9	+ 3.63	8.0
Total	416.76	39.518		365.24	9.5		87.6	+ 51.52	48.0
	(437.47)		(343.09)			(78.4)			
Average	18.12	1.718		15.88				+ 2.24	
	(18.23)		(14.30)						
Third subperiod:									
No. 1	68.77	4.215	63.71	67.92	6.1	92.6	98.7	+ 0.85	12.0
No. 2	77.34	7.185	55.47	62.66	9.3	71.7	81.0	+ 14.68	12.0
No. 3	61.49	6.335	49.58	55.91	10.3	80.6	90.9	+ 5.58	14.5
No. 4	71.63	4.778	55.48	60.25	6.7	77.5	84.1	+ 11.38	9.5
No. 5	74.32	9.039	58.37	67.40	12.2	78.5	90.7	+ 6.92	12.0
No. 6	38.53	8.072	41.06	49.12	20.9	106.6	127.5	− 10.59	12.0
Total	392.08	39.624	323.67	363.26	10.1	82.5	92.6	+ 28.82	72.0
Average	16.34	1.651	13.49	15.14				+ 1.20	

TABLE XLVI.—*Summary of nitrogen balances for Series I*—Continued.

Six men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Entire preservative period:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	220.713	15 608		207.65	7.1		94.1	+ 13.06	25.0
	(241.423)		(209.40)			(86.7)			
No. 2	241.73	23.942	189.31	213.25	9.9	78.3	88.2	+ 28.48	25.0
No. 3	200.12		157.78	176.25		78.8	88.1	+ 23.87	27.5
	[216.10]	[20.011]			[9.3]				
No. 4	230.367	18.252	191.76	210.01	7.9	83.2	91.2	+ 20.36	22.5
No. 5	204.27	22.492		176.79	11.0		86.4	+ 27.48	25.0
	(236.65)		(180.85)			(76.4)			
No. 6	149.27	20.876	139.67	160.55	13.9	93.6	107.6	− 11.28	25.0
Total	1,246.470			1,144.50			91.8	+101.97	150.0
	(1,299.560)		(1,068.77)			(82.2)			
	[1,262.450]	[121.181]			[9.6]				
Average	17.08			15.68				+ 1.40	
	(17.10)		(14.06)						
	[17.06]	[1.64]							
After period.									
No. 1	178.61	14.730		161.39	8.2		90.3	+ 17.22	
	(198.51)		(162.33)			(81.8)			
No. 2	181.49	15.883	147.09	162.98	8.8	81.0	89.8	+ 18.51	
No. 3	174.75	13.273	131.27	144.55	7.6	75.1	82.7	+ 30.20	
No. 4	143.94	15.252	119.19	134.44	10.6	82.8	93.4	+ 9.50	
No. 5	160.92		128.15	145.54		79.6	90.4	+ 15.38	
	[178.44]	[19.045]			[10.6]				
No. 6	146.95	17.030	120.32	137.34	11.6	81.9	93.5	+ 9.61	
Total	986.66			886.24			89.8	100.42	
	(1,006.56)		(808.35)			(80.3)			
	[1,004.18]	[95.213]			[9.5]				
Average	17.01			15.28				+ 1.73	
	(17.06)		(13.70)						
	[17.02]	[1.61]							

TABLE XLVII.—*Nitrogen balances for Series II.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(19.43)	(*a*)	(16.82)	....	....	(86.6)	....	....	....
20	(18.13)	(*a*)	(12.92)	....	....	(71.3)	....	....	....
21	15.24	2.41	15.32	17.73	15.8	100.5	116.3	− 2.49	....
22	16.12	1.77	12.96	14.73	11.0	80.4	91.4	+ 1.39	....
23	18.46	2.13	17.39	19.52	11.5	94.2	105.7	− 1.06	....
24	16.02	1.27	15.28	16.55	7.9	95.4	103.3	− .53	....
25	17.46	2.89	15.86	18.75	16.6	90.8	107.4	− 1.29	....
26	17.82	1.76	12.30	14.06	9.9	69.0	78.9	+ 3.76	....
27	16.63	2.08	13.52	15.60	12.5	81.3	93.8	+ 1.03	....
Total	117.75	14.31	....	116.94	12.2	....	99.3	+ .81	....
	(155.31)	....	(132.37)	....	....	(85.2)	....	....	....
Average	16.82	2.04	....	16.71	....	....	....	+ .11	....
	(17.26)	....	(14.71)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	19.62	4.36	14.58	18.94	22.2	74.3	96.5	+ 0.68	1.0
29	16.31	1.08	10.61	11.69	6.6	65.1	71.7	+ 4.62	1.0
30	14.99	2.21	12.32	14.53	14.7	82.2	96.9	+ .46	1.0
31	16.10	4.69	14.72	19.41	29.1	91.4	120.6	− 3.31	1.0
Total	67.02	12.34	52.23	64.57	18.4	77.9	96.3	+ 2.45	4.0
Average	16.76	3.08	13.06	16.14	....	....	....	+ .62	....
Second subperiod:									
1903—Feb. 1	19.26	(*b*)	12.06	12.06	....	62.6	62.6	+ 7.20	2.0
2	16.77	3.70	13.89	17.59	22.1	82.8	104.9	− .82	2.0
3	17.15	1.78	11.56	13.34	10.4	67.4	77.8	+ 3.81	2.0
4	17.49	1.75	13.06	14.81	10.0	74.7	84.7	+ 2.68	2.0
Total	70.67	7.23	50.57	57.80	10.2	71.6	81.8	+12.87	8.0
Average	17.67	1.81	12.64	14.45	....	....	....	+ 3.22	....
Third subperiod:									
1903—Feb. 5	16.88	2.07	11.99	14.06	12.3	71.0	83.3	+ 2.82	3.0
6	16.19	2.10	13.19	15.29	13.0	81.5	94.4	+ .90	3.0
7	17.80	2.59	15.73	18.32	14.6	88.4	102.9	− .52	3.0
8	17.67	2.03	13.46	15.49	11.5	76.2	87.7	+ 2.18	3.0
Total	68.54	8.79	54.37	63.16	12.8	79.3	92.2	+ 5.38	12.0
Average	17.14	2.20	13.59	15.79	....	....	....	+ 1.35	....
Subperiods 1, 2, and 3:									
Total	206.23	28.36	157.17	185.53	13.8	76.2	90.0	+20.70	24.0
Average	17.19	2.36	13.10	15.46	....	....	....	+ 1.73	....
Fourth subperiod: [c]									
1903—Feb. 9	14.83	1.35	11.04	12.39	9.1	74.4	83.5	+ 2.44	4.0
10	16.22	1.89	14.62	16.51	11.7	90.1	101.8	− .29	4.0

[a] Not collected. [b] No movement.
[c] Excluded from average; data not obtained for all members.

TABLE XLVII.—*Nitrogen balances for Series II*—Continued.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(21.71)	(*a*)	(18.54)	....	....	(85.4)	....	....	....
20	(19.65)	(*a*)	(14.41)	....	....	(73.3)	....	....	....
21	21.51	2.01	17.82	19.83	9.3	82.9	92.2	+ 1.68	....
22	20.40	1.29	13.14	14.43	6.3	64.4	70.7	+ 5.97	....
23	18.74	(*b*)	14.39	14.39	....	76.8	76.8	+ 4.35	....
24	17.92	2.02	15.51	17.53	11.3	86.5	97.8	+ .39	....
25	17.77	2.84	13.45	16.29	16.0	75.7	91.7	+ 1.48	....
26	20.25	1.83	14.64	16.47	9.0	72.3	81.3	+ 3.78	....
27	18.83	(*b*)	14.42	14.42	....	....	76.6	+ 4.41	....
Total	135.42	9.99	....	113.36	7.4	....	83.7	+22.06	....
	(176.78)	....	(136.32)	....	....	(77.1)	....	....	....
Average	19.35	1.43	....	16.19	....	....	....	+ 3.16	....
	(19.64)	....	(15.15)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	19.94	2.03	14.11	16.14	10.2	70.8	81.0	+ 3.80	1.0
29	17.48	3.09	13.05	16.14	17.7	74.6	92.3	+ 1.34	1.0
30	17.46	(*b*)	12.19	12.19	....	69.8	69.8	+ 5.27	1.0
31	19.28	1.96	16.96	18.92	10.2	87.9	98.1	+ .36	1.0
Total	74.16	7.08	56.31	63.39	9.6	75.9	85.5	+10.77	4.0
Average	18.54	1.77	14.08	15.85	....	....	....	+ 2.69	....
Second subperiod:									
1903—Feb. 1	18.96	2.36	14.26	16.62	12.5	75.2	87.7	+ 2.34	2.0
2	17.48	1.78	13.15	14.93	10.2	75.2	85.4	+ 2.55	2.0
3	(3.06)	(*a*)	(7.13)	....	....	(233.0)	....	....	0.0
4	....	(*a*)	Lost.	....	....	....	....	....	0.0
Total	36.44	4.14	....	31.55	11.4	....	86.6	+ 4.89	4.0
	(39.50)	....	(34.54)	....	....	(87.4)	....	....	....
Average	18.22	2.07	....	15.77	....	....	....	+ 2.45	....
	(13.17)	....	(11.51)	....	....	....	....	....	....
Third subperiod:									
1903—Feb. 5	(15.56)	(*a*)	(13.67)	....	....	(87.9)	....	....	0.0
6	(17.74)	(*a*)	(14.72)	....	....	(83.0)	....	....	0.0
7	(17.79)	(*a*)	(14.60)	....	....	(82.1)	....	....	0.0
8	(18.90)	(*a*)	(12.62)	....	....	(66.7)	....	....	0.0
Total	(69.99)	....	(55.61)	....	....	(79.5)	....	....	0.0
Average	(17.50)	....	(13.90)	....	....	....	....	....	....
Subperiods 1, 2, and 3.									
Total	110.60	11.22	....	94.94	10.1	....	85.8	+15.66	8.0
	(183.65)	....	(146.46)	....	....	(79.7)	....	....	
Average	18.43	1.87	....	15.82	....	....	....	+ 2.61	....
	(36.73)	....	(29.29)	....	....	....	....	....	....

[a] Discarded. [b] No movement.

TABLE XLVII.—*Nitrogen balances for Series II*—Continued.

No. 9.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(20.41)	(*a*)	(17.71)			(86.8)			
20	(19.20)	(*a*)	(14.50)			(75.5)			
21	19.97	1.42	17.02	18.44	7.1	85.2	92.3	+ 1.53	
22	19.94	.44	15.63	16.07	2.2	78.4	80.6	+ 3.87	
23	16.09	1.67	14.90	16.57	10.4	92.6	103.0	− .48	
24	19.38	(*b*)	16.74	16.74		86.4	86.4	+ 2.64	
25	19.35	2.30	15.75	18.05	11.9	81.4	93.3	+ 1.30	
26	20.33	2.08	12.69	14.77	10.2	62.5	72.7	+ 5.56	
27	(19.24)	(*a*)	(14.64)			(76.1)			
Total	115.06	7.91		100.64	6.9		87.5	+14.42	
	(173.91)		(139.58)			(80.3)			
Average	19.18	1.32		16.78				+ 2.40	
	(19.32)		(15.51)						
Preservative period.									
First subperiod:									
1903—Jan. 28	6.31	2.00	14.88	16.88	31.7	235.8	267.5	−10.57	1.0
29	15.84	1.62	14.96	16.58	10.2	94.5	104.7	− .74	1.0
30	15.58	1.67	14.54	16.21	10.7	93.3	104.0	− .63	1.0
31		Lost.	Not run.						1.0
Total	37.73	5.29	44.38	49.67	14.0	117.6	131.6	−11.94	4.0
Average	12.58	1.76	14.79	16.56				− 3.98	
Third subperiod: [c]									
1903—Feb. 5	(16.44)	(*a*)	(13.63)			(83.1)			0.0
6	(14.61)	(*a*)	(12.07)			(82.6)			0.0
7	(16.50)	(*a*)	(8.89)			(53.9)			0.0
8	(18.17)	(*a*)	(12.30)			(67.7)			0.0
Total	(65.72)		(46.89)			(71.3)			0.0
Average	(16.43)		(11.72)						
Subperiods 1 and 3:									
Total	37.73	5.29		49.67	14.0		131.6	−11.94	4.0
	(103.45)		(91.27)			(88.2)			
Average	12.58	1.76		16.56				− 3.98	
	(14.78)		(13.04)						

[a] Discarded.
[b] No movement.
[c] Data for second subperiod discarded.

TABLE XLVII.—*Nitrogen balances for Series II*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(18.48)	(*a*)	(18.45)			(99.8)			
20	(20.33)	(*a*)	(14.92)			(73.4)			
21	21.54	1.10	15.46	16.56	5.1	71.8	76.9	+ 4.98	
22	19.90	1.54	16.38	17.92	7.7	82.3	90.0	+ 1.98	
23	20.45	1.88	12.69	14.57	9.2	62.1	71.2	+ 5.88	
24	19.94	1.78	17.29	19.07	8.9	86.7	95.6	+ .87	
25	21.17	2.13	12.41	14.54	10.1	58.6	68.7	+ 6.63	
26	21.47	2.92	13.73	16.65	13.6	64.0	77.6	+ 4.82	
27	17.31	1.62	15.20	16.82	9.4	87.8	97.2	+ .48	
Total	141.78	12.97		116.13	9.1		82.0	+25.65	
	(180.59)		(136.53)			(75.6)			
Average	20.25	1.85		16.59				+ 3.66	
	(20.07)		(15.17)						
Preservative period.									
First subperiod:									
1903—Jan. 28	21.58	1.68	16.05	17.73	7.8	74.4	82.2	+ 3.85	1.0
29	(19.60)	(*a*)	(13.92)			(71.0)			1.0
30	18.78	1.45	13.87	15.32	7.7	73.9	81.6	+ 3.46	1.0
31	(19.56)	(*a*)	(19.30)			(98.7)			1.0
Total	40.36	3.13		33.05	7.8		81.9	+ 7.31	4.0
	(79.52)		(63.14)			(79.4)			
Average	20.18	1.56		16.52				+ 3.66	
	(19.88)		(15.78)						
Second subperiod:									
1903—Feb. 1	22.61	3.58	15.20	18.78	15.8	67.2	83.1	+ 3.83	2.0
2	19.91	1.22	15.05	16.27	6.1	75.6	81.7	+ 3.64	2.0
3	18.77	2.11	18.91	21.02	11.2	100.8	112.0	− 2.25	2.0
4	20.45	2.65	15.68	18.33	13.0	76.7	89.6	+ 2.12	2.0
Total	81.74	9.56	64.84	74.40	11.7	79.3	91.0	+ 7.34	8.0
Average	20.44	2.39	16.21	18.60				+ 1.84	
Third subperiod:									
1903—Feb. 5	20.36	2.98	17.82	20.80	14.7	87.5	102.2	− 0.44	3.0
6	19.49	(*b*)	15.56			79.8		+ 3.93	3.0
7	20.12	3.12	16.70	19.82	15.5	83.0	98.5	+ .30	3.0
8	21.50	(*b*)	15.88	15.88			73.9	+ 5.62	3.0
Total	81.47	6.10	65.96	72.06	7.5	81.0	88.5	+ 9.41	12.0
Average	20.37	1.52	16.49	18.02				+ 2.35	
Subperiods 1, 2, and 3:									
Total	203.57	18.79		179.51	9.2		88.2	+24.06	24.0
	(242.73)		(193.94)			(79.9)			
Average	20.36	1.88		17.95				+ 2.41	
	(20.23)		(16.16)						
Fourth subperiod: [c]									
1903—Feb. 9	20.50	2.70	16.51	19.21	13.2	80.5	93.7	+ 1.29	4.0
10	(20.70)	(*a*)	(15.65)			(75.6)			4.0

[a] Discarded.
[b] No movement.
[c] Excluded from average; data not obtained for all members.

TABLE XLVII.—*Nitrogen balances for Series II*—Continued.

No. 11.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(19.84)	(*a*)	(15.34)			(77.3)			
20	(17.83)	(*a*)	(13.46)			(75.3)			
21	20.26	1.42	13.83	15.25	7.0	68.3	75.3	+ 5.01	
22	19.36	2.44	15.23	17.67	12.6	78.7	91.3	+ 1.69	
23	19.46	3.05	14.61	17.66	15.7	75.1	90.8	+ 1.80	
24	18.01	3.05	11.21	14.26	16.9	62.3	79.2	+ 3.75	
25	20.49	1.01	16.54	17.55	5.0	80.7	85.7	+ 2.94	
26	19.28	1.54	14.77	16.31	8.0	76.6	84.6	+ 2.97	
27	19.87	2.14	15.93	18.07	10.8	80.1	90.9	+ 1.80	
Total	136.73	14.65		116.77	10.7		85.4	+19.96	
	(174.40)		(130.92)			(75.5)			
Average	19.53	2.09		16.68				+ 2.85	
	(19.38)		(14.55)						
Preservative period.									
First subperiod:									
1903—Jan. 28	20.02	1.10	15.77	16.87	5.5	78.8	84.3	+ 3.15	1.0
29	18.07	1.60	14.65	16.25	8.9	81.0	89.9	+ 1.82	1.0
30	17.87	1.37	15.13	16.50	7.7	84.6	92.3	+ 1.37	1.0
31	17.43	2.05	14.52	16.57	11.8	83.3	95.1	+ .86	1.0
Total	73.39	6.12	60.07	66.19	8.3	81.9	90.2	+ 7.20	4.0
Average	18.35	1.53	15.02	16.55				+ 1.80	
Second subperiod:									
1903—Feb. 1	18.45	1.01	14.49	15.50	5.5	78.5	84.0	+ 2.95	2.0
2	17.73	.25	14.01	14.26	1.4	79.0	80.4	+ 3.47	2.0
3		(*a*)	(*b*)						0.0
4	[4.73]	[.70]	(*b*)		[14.8]				0.0
Total	36.18		28.50	29.76		78.8	82.3	+ 6.42	4.0
	[40.91]	[1.96]			[4.8]				
Average	18.09		14.25	14.88				+ 3.21	
	[13.64]	[.65]							
Third subperiod:									
1903—Feb. 5	(11.47)	(*a*)	(12.71)			(110.8)			0.0
6	(14.92)	(*a*)	(11.58)			(77.6)			0.0
7	(14.42)	(*a*)	(14.27)			(99.0)			0.0
8	(17.40)	(*a*)	(11.46)			(65.9)			0.0
Total	(58.21)		(50.02)			(85.9)			0.0
Average	(14.55)		(12.50)						
Subperiods 1, 2, and 3:									
Total	109.57			95.95			87.6	+13.62	8.0
	(167.78)		(138.59)			(82.6)			
	[114.30]	[8.08]			[7.1]				
Average	18.26			15.99				+ 2.27	
	(16.78)		(13.86)						
	[16.33]	[1.15]							

a Discarded. *b* Not run.

TABLE XLVII.—*Nitrogen balances for Series II*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(20.37)	(a)	(15.15)	....	....	(74.4)	....	....	....
20	(18.07)	(a)	(13.70)	....	....	(75.8)	....	....	....
21	20.13	1.36	15.05	16.41	6.8	74.8	81.5	+ 3.72	....
22	19.11	1.91	11.68	13.59	10.0	61.1	71.1	+ 5.52	....
23	18.29	1.90	11.40	13.30	10.4	62.3	72.7	+ 4.99	....
24	18.78	(b)	13.39	13.39	....	71.3	71.3	+ 5.39	....
25	20.77	1.66	12.62	14.28	8.0	60.8	68.8	+ 6.49	....
26	20.27	3.44	12.86	16.30	17.0	63.4	80.4	+ 3.97	....
27	18.34	.97	9.72	10.69	5.3	53.0	58.3	+ 7.65	....
Total	135.69	11.24	....	97.96	8.3	....	72.2	+37.73	....
	(174.13)	....	(115.57)	....	....	(60.6)	....	....	....
Average	19.38	1.61	....	13.99	....	....	....	+ 5.39	....
	(19.35)	....	(12.84)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	20.74	1.62	13.43	15.05	7.8	64.8	72.6	+ 5.69	1.0
29	18.06	1.60	14.31	15.91	8.9	79.2	88.1	+ 2.15	1.0
30	17.55	1.57	12.60	14.17	8.9	71.8	80.7	+ 3.38	1.0
31	18.86	2.63	12.87	15.50	13.9	68.2	82.2	+ 3.36	1.0
Total	75.21	7.42	53.21	60.63	9.9	70.7	80.6	+14.58	4.0
Average	18.80	1.86	13.30	15.15	....	....	....	+ 3.65	....
Second subperiod:									
1903—Feb. 1	21.19	1.84	13.41	15.25	8.7	63.3	72.0	+ 5.94	2.0
2	17.53	2.06	15.45	17.51	11.8	88.1	99.9	+ .02	2.0
3	13.90	.58	13.59	14.17	4.2	97.8	101.9	− .27	2.0
4	16.32	1.10	13.34	14.44	6.7	81.7	88.5	+ 1.88	2.0
Total	68.94	5.58	55.79	61.37	8.1	80.9	89.0	+ 7.57	8.0
Average	17.24	1.40	13.95	15.34	....	....	....	+ 1.90	....
Third subperiod:									
1903—Feb. 5	16.97	1.61	14.77	16.38	9.5	87.0	96.5	+ .59	3.0
6	10.88	.67	13.90	14.57	6.2	127.8	133.9	− 3.69	0.0
7	6.61	1.34	10.65	11.99	20.3	161.1	181.4	− 5.38	0.0
8	4.64	1.40	10.32	11.72	30.2	222.4	252.6	− 7.08	0.0
Total	39.10	5.02	49.64	54.66	12.8	127.0	139.8	−15.56	3.0
Average	9.78	1.26	12.41	13.66	....	....	....	− 3.88	....
Subperiods 1, 2, and 3:									
Total	183.25	18.02	158.64	176.66	9.8	86.6	96.4	+ 6.59	15.0
Average	15.27	1.50	13.22	14.72	....	....	....	+ .55	....

a Discarded. b No movement.

TABLE XLVIII.—*Summary of nitrogen balances for Series II.*

Two men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
	Grams.	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Fore period.									
No. 7	117.75	14.31		116.94	12.2		99.3	+ 0.81	
	(155.31)		(132.37)			(85.2)			
No. 10	141.78	12.97		116.13	9.1		82.0	+25.65	
	(180.59)		(136.53)			(75.6)			
Total	259.53	27.28		233.07	10.5		89.8	+26.46	
	(335.90)		(268.90)			(80.1)			
Average	18.54	1.95		16.65				+ 1.89	
	(18.66)		(14.94)						
Preservative period.									
First subperiod:									
No. 7	67.02	12.34	52.23	64.57	18.4	77.9	96.3	+ 2.45	4.0
No. 10	40.36	3.13		33.05	7.8		81.9	+ 7.31	4.0
	(79.52)		(63.14)			(79.4)			
Total	107.38	15.47		97.62	14.4		90.9	+ 9.76	8.0
	(146.54)		(115.37)			(78.7)			
Average	17.90	2.58		16.27				+ 1.63	
	(18.32)		(14.42)						
Second subperiod:									
No. 7	70.67	7.23	50.57	57.80	10.2	71.6	81.8	+12.87	8.0
No. 10	81.74	9.56	64.84	74.40	11.7	79.3	91.0	+ 7.34	8.0
Total	152.41	16.79	115.41	132.20	11.0	75.7	86.7	+20.21	16.0
Average	19.05	2.10	14.43	16.53				+ 2.52	
Subperiods 1 and 2:									
Total	259.79	32.26		229.82	12.4+		88.5	+29.97	24.0
	(298.95)		(230.78)			(77.2)			
Average	18.56	2.30		16.41				+ 2.14	
	(18.68)		(14.42)						
Third subperiod:									
No. 7	68.54	8.79	54.37	63.16	12.8	79.3	92.2	+ 5.38	12.0
No. 10	81.47	6.10	65.96	72.06	7.5	81.0	88.5	+ 9.41	12.0
Total	150.01	14.89	120.33	135.22	9.9	80.2	90.1	+14.79	24.0
Average	18.78	1.86	15.04	16.90				+ 1.85	
Subperiods 1, 2, and 3:									
Total	409.80	47.15		365.04	11.5		89.1	+44.76	48.0
	(448.96)		(351.11)			(78.2)			
Average	18.63	2.14		16.59				+ 2.03	
	(18.71)		(14.63)						

TABLE XLVIII.—*Summary of nitrogen balances for Series II*—Continued.

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 7	117.75	14.31	......	116.94	12.2	......	99.3	+ 0.81	......
	(155.31)	......	(132.37)	......	......	(85.2)	......	......	......
No. 10	141.78	12.97	......	116.13	9.1	......	82.0	+25.65	......
	(180.59)	......	(136.53)	......	......	(75.6)	......	......	......
No. 12	135.69	11.24	......	97.96	8.3	......	72.2	+37.73	......
	(174.13)	......	(115.57)	......	......	(60.6)	......	......	......
Total	395.22	38.52	......	331.03	9.7	......	83.7	+64.19	......
	(510.03)	......	(384.47)	......	......	(75.4)	......	......	......
Average	18.82	1.83	......	15.76	......	......	......	+ 3.06	......
	(18.89)	......	(14.24)	......	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 7	67.02	12.34	52.23	64.57	18.4	77.9	96.3	+ 2.45	4.0
No. 10	40.36	3.13	......	33.05	7.8	......	81.9	+ 7.31	4.0
	(79.52)	......	(63.14)	......	......	(79.4)	......	......	
No. 12	75.21	7.42	53.21	60.63	9.9	70.7	80.6	+14.58	4.0
Total	182.59	22.89	......	158.25	12.5	......	86.7	+24.34	12.0
	(221.75)	......	(168.58)	......	......	(76.0)	......	......	
Average	18.26	2.29	......	15.83	......	......	......	+ 2.43	......
	(18.48)	......	(14.05)	......	......	......	......	......	......
Second subperiod:									
No. 7	70.67	7.23	50.57	57.80	10.2	71.6	81.8	+12.87	8.0
No. 10	81.74	9.56	64.84	74.40	11.7	79.3	91.0	+ 7.34	8.0
No. 12	68.94	5.58	55.79	61.37	8.1	80.9	89.0	+ 7.57	8.0
Total	221.35	22.37	171.20	193.57	10.1	77.3	87.4	+27.78	24.0
Average	18.45	1.86	14.27	16.13	......	......	......	+ 2.32	......
Subperiods 1 and 2:									
Total	403.94	45.26	......	351.82	11.2	......	87.1	+52.12	36.0
	(443.10)	......	(339.78)	......	......	(76.7)	......	......	
Average	18.36	2.06	......	15.99	......	......	......	+ 2.37	......
	(18.46)	......	(14.16)	......	......	......	......	......	......

TABLE XLIX.—*Nitrogen balances for Series III.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	18.39	2.13	16.59	18.72	11.58	90.21	101.8	− 0.33	....
20	19.50	1.72	18.78	20.50	8.82	96.31	105.1	− 1.00	....
21	16.63	1.16	16.29	17.45	6.98	97.96	104.9	− .82	....
22	19.92	1.46	16.24	17.70	7.33	81.53	88.9	+ 2.22	....
23	18.22	1.13	16.28	17.41	6.20	89.35	95.6	+ .81	....
24	17.96	1.34	17.66	19.00	7.46	98.33	105.8	− 1.04	....
25	17.65	.822	16.97	17.79	4.66	96.15	100.8	− .14	....
26	17.59	1.32	17.89	19.21	7.51	101.71	109.2	− 1.62	....
27	17.85	2.30	17.51	19.81	12.89	98.10	111.0	− 1.96	....
Total	163.71	13.38	154.21	167.59	8.20	94.20	102.4	− 3.88	....
Average	18.19	1.49	17.13	18.62	....	....	....	− .43	....
Preservative period.									
First subperiod:									
1903—Feb. 28	18.36	0.673	18.22	18.89	3.67	99.24	102.9	− 0.53	1.0
Mar. 1	20.29	2.66	18.42	21.08	13.11	90.78	103.9	− .79	1.0
2	18.48	1.67	17.14	18.81	9.04	92.75	101.8	− .33	1.0
3	19.27	1.28	17.20	18.48	6.64	89.26	95.9	+ .79	1.0
Total	76.40	6.28	70.98	77.26	8.20	92.90	101.1	− .86	4.0
Average	19.10	1.57	17.75	19.32	....	....	....	− .22	....
Second subperiod:									
1903—Mar. 4	17.78	0.968	17.95	18.92	5.44	100.96	106.4	− 1.14	4.0
5	16.32	1.52	16.13	17.65	9.31	98.84	108.1	− 1.33	4.0
6	16.55	1.44	16.11	17.55	8.70	97.34	106.0	− 1.00	2.0
7	17.79	.798	15.46	16.26	4.49	86.90	91.4	+ 1.53	2.0
Total	68.44	4.73	65.65	70.38	6.90	95.90	102.8	− 1.94	12.0
Average	17.11	1.18	16.41	17.59	....	....	....	− .48	....
Third subperiod:									
1903—Mar. 8	15.61	1.16	16.04	17.20	7.43	102.75	110.2	− 1.59	3.0
9	18.48	1.01	15.33	16.34	5.47	82.95	88.4	+ 2.14	2.0
10	19.98	1.55	15.91	17.46	7.76	79.63	87.4	+ 2.52	3.0
11	13.36	.421	15.90	16.32	3.15	119.01	122.2	− 2.96	2.0
Total	67.43	4.14	63.18	67.32	6.10	93.70	99.8	+ .11	10.0
Average	16.86	1.03	15.80	16.83	....	....	....	+ .03	....
Entire preservative period:									
Total	212.27	15.15	199.81	214.96	7.20	94.10	101.3	− 2.69	26.0
Average	17.69	1.26	16.65	17.91	....	....	....	− .22	....
After period.									
1903—Mar. 12	15.48	1.10	16.46	17.56	7.11	106.33	113.4	− 2.08	....
13	21.39	1.21	17.20	18.41	5.66	80.41	86.1	+ 2.98	....
14	21.21	1.63	18.47	20.10	7.69	87.08	94.8	+ 1.11	....
15	19.05	1.15	17.11	18.26	6.04	89.82	95.9	+ .79	....
16	19.34	.841	16.22	17.06	4.35	83.87	88.2	+ 2.28	....
17	21.09	1.47	16.64	18.11	6.97	78.90	85.9	+ 2.98	....
18	19.58	1.64	15.99	17.63	8.38	81.66	90.0	+ 1.95	....
19	18.89	1.18	14.59	15.77	6.25	77.24	83.5	+ 3.12	....
Total	156.03	10.22	132.68	142.90	6.60	85.00	91.6	+13.13	....
Average	19.50	1.28	16.58	17.86	....	....	....	+ 1.64	....

TABLE XLIX.—*Nitrogen balances for Series III*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	15.69	1.98	14.59	16.57	12.6	93.0	105.6	— 0.88	....
20	18.28	1.53	14.79	16.32	8.4	80.9	89.3	+ 1.96	....
21	17.38	1.18	14.38	15.56	6.8	82.7	89.5	+ 1.82	....
22	18.57	1.69	14.83	16.52	9.1	79.9	89.0	+ 2.05	....
23	18.56	1.31	15.51	16.82	7.0	83.6	90.6	+ 1.74	....
24	17.52	.722	16.02	16.74	4.1	91.4	95.5	+ .78	....
25	16.49	1.14	15.37	16.51	6.9	93.2	100.1	— .02	....
26	16.63	1.73	15.66	17.39	10.4	94.2	104.6	— .76	....
27	17.33	1.59	16.16	17.75	9.2	93.2	102.4	— .42	....
Total	156.45	12.872	137.31	150.18	8.2	87.8	96.0	+ 6.27	....
Average	17.38	1.43	15.26	16.69	....	....	....	+ .69	....
Preservative period.									
First subperiod:									
1903—Feb. 28	19.30	1.69	15.91	17.60	8.8	82.4	91.2	+ 1.70	1.0
Mar. 1	17.99	1.47	16.13	17.60	8.2	89.6	97.8	+ .39	1.0
2	18.84	1.28	16.65	17.93	6.8	88.4	95.2	+ .91	1.0
3	19.00	1.24	14.79	16.03	6.5	77.9	84.4	+ 2.97	1.0
Total	75.13	5.68	63.48	69.16	7.6	84.5	92.1	+ 5.97	4.0
Average	18.78	1.42	15.87	17.29	....	....	....	+ 1.49	....
Second subperiod:									
1903—Mar. 4	17.95	1.12	15.81	16.93	6.2	88.1	94.3	+ 1.02	4.0
5	9.37	.425	13.39	13.82	4.5	142.9	147.4	— 4.45	2.0
6	9.16	(a)	12.28	12.28	....	134.1	134.1	— 3.12	0.0
7	11.59	(a)	14.14	14.14	....	122.0	122.0	— 2.55	1.0
Total	48.07	1.545	55.62	57.17	3.2	115.7	118.9	— 9.10	7.0
Average	12.02	.77	13.90	14.29	....	....	....	— 2.27	....
Third subperiod:									
1903—Mar. 8	5.02	1.10	13.97	15.07	21.9	278.3	300.2	—10.05	0.0
9	8.15	1.13	14.21	15.34	13.9	174.3	188.2	— 7.19	0.0
10	13.18	.862	14.53	15.39	6.5	110.3	116.8	— 2.21	0.0
11	19.27	1.01	14.75	15.76	5.2	76.6	81.8	+ 3.51	0.0
Total	45.62	4.102	57.46	61.56	9.0	125.9	134.9	—15.94	0.0
Average	11.40	1.026	14.36	15.39	....	....	....	— 3.99	....
Entire preservative period:									
Total	168.82	11.327	176.56	187.89	6.7	104.6	111.3	—19.07	11.0
Average	14.07	.941	14.71	15.66	....	....	....	— 1.59	....
After period.									
1903—Mar. 12	19.30	1.72	15.39	17.11	8.9	79.8	88.7	+ 2.19	....
13	19.22	1.21	14.79	16.00	6.3	76.9	83.2	+ 3.22	....
14	20.13	1.57	15.37	16.94	7.8	76.4	84.2	+ 3.19	....
15	19.62	1.19	13.05	14.24	6.1	66.5	72.6	+ 5.38	....
16	19.98	1.78	14.31	16.09	8.9	71.6	80.5	+ 3.89	....
17	21.36	2.49	14.20	16.69	11.6	66.5	78.1	+ 4.67	....
18	19.41	1.49	12.60	14.09	7.7	64.9	72.6	+ 5.32	....
19	18.21	.781	12.79	13.57	4.3	70.2	74.5	+ 4.64	....
Total	157.23	12.231	112.50	124.73	7.8	71.5	79.3	+32.50	....
Average	19.65	1.529	14.06	15.59	....	....	....	+ 4.06	....

a No movement.

TABLE XLIX.—*Nitrogen balances for Series III*—Continued.

NO. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	14.41	2.26	11.36	13.62	15.7	78.8	94.5	+ 0.79	...
20	13.31	.878	12.91	13.79	6.6	97.0	103.6	− .48	...
21	[14.16]	[1.45]	Lost.	...	[10.2]	...	...	...	...
22	16.63	1.64	14.66	16.30	9.8	88.2	98.0	+ .33	...
23	16.22	2.35	16.70	19.05	14.4	103.0	117.4	− 2.83	...
24	15.20	.703	13.34	14.04	4.6	87.8	92.4	+ 1.16	...
25	15.00	1.32	14.66	15.98	8.8	97.7	106.5	− .98	...
26	15.66	1.62	14.10	15.72	10.4	90.0	100.4	− .06	...
27	13.91	1.23	11.99	13.22	8.8	86.2	95.0	+ .69	...
Total	120.34	...	109.72	121.72	...	91.1	101.1	− 1.38	...
	[134.50]	[13.451]	...	...	[10.0]	...	...	...	...
Average	15.04	...	13.72	15.22	...	...	...	− .18	...
	[14.94]	[1.495]	...	...	...	...	...	...	...
Preservative period.									
First subperiod:									
1903—Feb. 28	15.35	1.01	12.46	13.47	6.6	81.2	87.8	+ 1.88	1.0
Mar. 1	16.27	1.36	13.59	14.95	8.4	83.5	91.9	+ 1.32	1.0
2	(15.72)	Lost.	(11.92)	...	...	(75.8)	...	...	1.0
3	16.17	1.24	13.02	14.26	7.7	80.5	88.2	+ 1.91	1.0
Total	47.79	3.61	...	42.68	7.6	...	89.3	+ 5.11	4.0
	(63.51)	...	(50.99)	...	...	(80.3)	...	...	...
Average	15.93	1.20	...	14.23	...	...	...	+ 1.72	...
	(15.88)	...	(12.75)	...	...	...	...	...	...
Second subperiod:									
1903—Mar. 4	15.39	1.64	12.82	14.46	10.7	83.3	94.0	+ 0.93	4.0
5	16.21	.410	5.41	5.82	2.5	33.4	35.9	−10.39	4.0
6	12.38	1.83	11.45	13.28	14.8	92.5	107.3	− .90	2.0
7	13.53	1.34	10.41	11.75	9.9	76.9	86.8	+ 1.78	2.0
Total	57.51	5.22	40.09	45.31	9.0	69.8	78.8	+12.20	12.0
Average	14.38	1.30	10.02	11.33	...	...	...	+ 3.05	...
Third subperiod:									
1903—Mar. 8	13.76	.735	16.54	17.28	5.3	120.3	125.6	− 3.52	3.0
9	13.41	2.24	10.75	12.99	16.7	80.2	96.9	+ .42	3.0
10	12.77	.923	11.47	12.39	7.2	89.8	97.0	+ .38	2.0
11	11.68	.574	10.20	10.77	4.9	87.3	92.2	+ .91	3.0
Total	51.62	4.472	48.96	53.43	8.7	94.8	103.5	− 1.81	11.0
Average	12.90	1.118	12.24	13.36	...	...	...	...	...
Entire preservative period:									
Total	156.92	13.302	...	141.42	8.5	...	90.1	+15.50	27.0
	(172.64)	...	(140.04)	...	...	(81.1)	...	...	
Average	14.27	1.209	...	12.86	...	...	...	+ 1.41	...
	(14.39)	...	(11.67)	...	...	...	...	...	...
After period.									
1903—Mar. 12	14.34	1.83	9.45	11.28	12.8	65.9	78.7	+ 3.06	...
13	18.15	.674	12.85	13.52	3.7	70.8	74.5	+ 4.63	...
14	14.76	1.66	12.50	14.16	11.2	84.7	95.9	+ .60	...
15	15.42	.743	13.14	13.88	4.8	85.2	90.0	+ 1.54	...
16	17.38	1.01	11.76	12.77	5.8	67.7	73.5	+ 4.61	...
17	(17.98)	Lost.	(10.14)	...	...	(56.4)	...	...	...
18	15.29	1.78	11.09	12.87	11.6	72.6	84.2	+ 2.42	...
19	15.12	1.84	10.92	12.76	12.2	72.2	84.4	+ 2.36	...
Total	110.46	9.537	...	91.24	8.6	...	82.6	+19.22	...
	(128.44)	...	(91.85)	...	...	(71.5)	...	...	...
Average	15.78	1.362	...	13.03	...	...	...	+ 2.75	...
	(16.06)	...	(11.48)	...	...	...	...	...	...

Table XLIX.—*Nitrogen balances for Series III*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	Absent.								
20	17.46	1.59	11.84	13.43	9.1	67.8	76.9	+ 4.03	
21	16.37	.82	11.50	12.32	5.0	70.3	75.3	+ 4.05	
22	(16.77)	(a)	(11.90)			(71.0)			
23	19.31	.882	17.72	18.60	4.6	91.7	96.3	+ .71	
24	18.91	1.70	15.22	16.92	9.0	80.5	89.5	+ 1.99	
25	19.24	1.68	13.68	15.36	8.7	71.1	79.8	+ 3.88	
26	17.87	1.85	16.80	18.65	10.4	94.0	104.4	− .78	
27	16.24	1.43	12.65	14.08	8.8	77.9	86.7	+ 2.16	
Total	125.40	9.95		109.36	7.9		87.2	+16.04	
	(142.17)		(111.31)			(78.3)			
Average	17.91	1.42		15.62				+ 2.29	
	(17.77)		(13.91)						
Preservative period.									
First subperiod:									
1903—Feb. 28	16.16	1.54	15.97	17.51	9.6	98.8	108.4	− 1.35	1.0
Mar. 1	18.12	2.77	14.20	16.97	15.3	78.4	93.7	+ 1.15	1.0
2	17.43	1.37	16.84	18.21	7.9	96.6	104.5	− .78	1.0
3	19.74	1.78	16.23	18.01	9.0	82.2	91.2	+ 1.73	1.0
Total	71.45	7.46	63.24	70.70	10.5	88.5	99.0	+ .75	4.0
Average	17.86	1.86	15.81	17.67				+ .19	
Second subperiod:									
1903—Mar. 4	16.79	1.31	14.34	15.65	7.8	85.4	93.2	+ 1.14	4.0
5	16.78	1.86	6.75	8.61	11.1	40.2	51.3	+ 8.17	4.0
6	12.78	1.04	12.85	13.89	8.1	100.6	108.7	− 1.11	2.0
7	12.59	1.65	12.29	13.94	13.1	97.6	110.7	− 1.35	2.0
Total	58.94	5.86	46.23	52.09	9.9	78.5	88.4	+ 6.85	12.0
Average	14.74	1.46	11.56	13.02				+ 1.72	
Third subperiod:									
1903—Mar. 8	13.28	1.34	11.24	12.58	10.1	84.6	94.7	+ 0.70	3.0
9	13.14	1.07	11.56	12.63	8.1	88.0	96.1	+ .51	1.7
10	14.20	1.82	12.85	14.67	12.8	90.5	103.3	− .47	3.0
11	7.73	1.74	10.66	12.40	22.5	137.9	160.4	− 4.67	2.0
Total	48.35	5.97	46.31	52.28	12.3	95.8	108.1	− 3.93	9.7
Average	12.09	1.49	11.58	13.07				− .98	
Entire preservative period:									
Total	178.74	19.29	155.78	175.07	10.8	87.1	97.9	+ 3.67	25.7
Average	14.90	1.61	12.98	14.59				+ .31	
After period.									
1903—Mar. 12	(12.10)	Lost.	(9.86)			(81.5)			
13	(15.63)	Lost.	(10.11)			(64.7)			
14	17.47	(b)	9.98	9.98		57.1	57.1	+ 7.49	
15	14.78	1.91	10.56	12.50	13.1	71.5	81.6	+ 2.28	
16	[17.35]	[1.89]	Lost.		[10.9]				
17	17.08	.994	11.18	12.17	5.8	65.5	71.3	+ 4.91	
18	16.22	1.39	12.48	13.87	8.6	76.9	85.5	+ 2.35	
19	(17.00)	(a)	(12.93)			(76.1)			
Total	65.55			48.52			74.0	+17.03	
	(110.28)		(77.10)			(69.9)			
	[82.90]	[6.21]			[7.5]				
Average	16.39			12.13				+ 4.26	
	(15.75)		(11.01)						
	[16.58]	[1.24]							

a Discarded. b No movement.

TABLE XLIX.—*Nitrogen balances for Series III*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	20.84	1.09	14.23	15.32	5.2	68.3	73.5	+ 5.52	....
20	19.91	.517	16.24	16.76	2.6	81.6	84.2	+ 3.15	....
21	19.34	.973	17.74	18.71	5.0	91.7	96.7	+ .63	....
22	21.74	3.62	15.73	19.35	16.6	72.4	89.0	+ 2.39	....
23	20.16	1.90	15.41	17.31	9.4	96.5	85.9	+ 2.85	....
24	19.72	.677	18.06	18.74	3.4	91.6	95.0	+ .98	....
25	19.51	1.24	17.25	18.49	6.4	88.4	94.8	+ 1.02	....
26	20.34	2.71	18.47	21.18	13.3	90.8	104.1	− .84	....
27	18.73	.510	17.15	17.66	2.7	91.6	94.3	+ 1.07	....
Total	180.29	13.237	150.28	163.52	7.3	83.4	90.7	+16.77	....
Average	20.03	1.47	16.70	18.17	....	....	....	+ 1.86	....
Preservative period.									
First subperiod:									
1903—Feb. 28	20.78	2.61	16.68	19.29	12.6	80.2	92.8	+ 1.49	1.0
Mar. 1	22.71	.186	17.08	17.27	.8	75.2	76.0	+ 5.44	1.0
2	21.26	1.91	16.80	18.71	9.0	79.0	88.0	+ 2.55	1.0
3	21.26	2.50	18.08	20.58	11.8	85.0	96.8	+ .68	1.0
Total	86.01	7.206	68.64	75.85	8.4	79.8	88.2	+10.16	4.0
Average	21.50	1.80	17.16	18.96	....	....	....	+ 2.54	....
Second subperiod:									
1903—Mar. 4	20.29	1.37	17.86	19.23	6.8	88.0	94.8	+ 1.06	4.0
5	20.64	1.02	16.64	17.66	5.0	80.6	85.6	+ 2.98	4.0
6	17.71	2.70	14.85	17.55	15.2	83.9	99.1	+ .16	2.0
7	17.29	1.60	15.22	16.82	9.3	88.0	97.3	+ .47	2.0
Total	75.93	6.69	64.57	71.26	8.8	85.0	93.8	+ 4.67	12.0
Average	18.98	1.67	16.14	17.82	....	....	....	+ 1.17	....
Third subperiod:									
1903—Mar. 8	16.78	1.52	14.34	15.86	9.0	85.5	94.5	+ 0.92	3.0
9	17.31	.382	14.52	14.90	2.2	83.9	86.1	+ 2.41	3.0
10	14.76	.721	14.24	14.96	4.9	96.5	101.4	− .20	2.2
11	10.61	.269	13.79	14.06	2.5	130.0	132.5	− 3.45	3.0
Total	59.46	2.892	56.89	59.78	4.9	95.6	100.5	− .32	11.2
Average	14.86	.723	14.22	14.94	....	....	....	− .08	....
Entire preservative period:									
Total	221.40	16.79	190.10	206.89	7.6	85.8	93.4	+14.51	27.2
Average	18.45	1.40	15.84	17.24	....	....	....	+ 1.21	....
After period.									
1903—Mar. 12	14.38	2.33	15.48	17.81	16.2	107.7	123.9	− 3.43	....
13	20.08	1.65	15.01	16.66	8.2	74.8	83.0	+ 3.42	....
14	22.91	2.19	17.36	19.55	9.5	75.8	85.3	+ 3.36	....
15	22.01	(a)	16.10	16.10	....	73.1	73.1	+ 5.91	....
16	22.81	1.45	15.69	17.14	6.3	68.8	75.1	+ 5.67	....
17	22.34	2.14	16.60	18.74	9.6	74.3	83.9	+ 3.60	....
18	22.63	.417	15.98	16.40	1.9	70.6	72.5	+ 6.23	....
19	22.11	1.57	15.90	17.47	7.1	71.9	79.0	+ 4.64	....
Total	169.27	11.747	128.12	139.87	6.9	75.7	82.6	+29.40	....
Average	21.16	1.68	16.02	17.48	....	....	....	+ 3.68	....

[a] No movement.

TABLE XLIX.—*Nitrogen balances for Series III*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	13.34	(*a*)	8.69	8.69	....	65.1	65.1	+ 4.65	....
20	12.74	.707	11.02	11.73	5.6	86.5	92.1	+ 1.01	....
21	12.82	3.78	11.03	14.81	29.5	86.0	115.5	− 1.99	....
22	13.20	1.79	9.94	11.73	13.6	75.3	88.9	+ 1.47	....
23	15.35	(*a*)	12.24	12.24	....	79.7	79.7	+ 3.11	....
24	16.64	1.11	12.54	13.65	6.7	75.3	82.0	+ 2.99	....
25	15.32	1.32	13.84	15.16	8.6	90.4	99.0	+ .16	....
26	13.71	1.59	13.62	15.21	11.6	99.3	110.9	− 1.50	....
27	14.05	(*a*)	13.60	13.60	....	96.8	96.8	+ .45	....
Total	127.17	10.297	106.52	116.82	8.1	83.8	91.9	+10.35	....
Average	14.13	1.144	11.84	12.98	....	....	....	+ 1.15	....
Preservative period.									
First subperiod:									
1903—Feb. 28	10.32	2.11	13.65	15.76	20.4	132.3	152.7	− 5.44	1.0
Mar. 1	9.39	2.51	13.18	15.69	26.7	140.4	167.1	− 6.30	.0
2	11.24	1.91	11.40	13.31	17.0	101.4	118.4	− 2.07	.0
3	16.60	.927	15.31	16.24	5.6	92.2	97.8	+ .36	.0
Total	47.55	7.457	53.54	61.00	15.7	112.6	128.3	−13.45	1.0
Average	11.89	1.864	13.38	15.25	....	....	....	− 3.36	....
Second subperiod:									
1903—Mar. 4	13.75	1.55	15.49	17.04	11.3	112.6	123.9	− 3.29	.0
5	14.71	2.83	14.22	17.05	19.2	96.7	115.9	− 2.34	.0
6	13.54	2.33	12.38	14.71	17.2	91.4	108.6	− 1.17	1.0
7	16.28	2.20	15.09	17.29	13.5	92.7	106.2	− 1.01	2.0
Total	58.28	8.91	57.18	66.09	15.3	98.1	113.4	− 7.81	3.0
Average	14.57	2.23	14.30	16.52	....	....	....	− 1.95	....
Third subperiod:									
1903—Mar. 8	15.59	2.55	10.46	13.01	16.4	67.1	83.5	+ 2.58	3.0
9	14.11	1.66	12.45	14.11	11.8	88.2	100.0	0.0	3.0
10	16.36	(*a*)	12.47	12.47	....	76.2	76.2	+ 3.89	3.0
11	16.33	2.04	12.25	14.29	12.5	75.0	87.5	+ 2.04	3.0
Total	62.39	6.25	47.63	53.88	10.0	76.3	86.3	+ 8.51	12.0
Average	15.60	1.56	11.91	13.47	....	....	....	+ 2.13	....
Entire preservative period:									
Total	168.22	22.617	158.35	180.97	13.5	94.1	107.6	−12.75	16.0
Average	14.02	1.885	13.20	15.08	....	....	....	− 1.06	....
After period.									
1903—Mar. 12	16.27	2.16	14.45	16.61	13.3	88.8	102.1	− 0.34	....
13	16.42	2.05	13.39	15.44	12.5	81.5	94.0	+ .98	....
14	18.08	.771	14.40	15.17	4.3	79.6	83.9	+ 2.91	....
15	18.20	1.62	15.09	16.71	8.9	82.9	91.8	− 1.49	....
16	16.87	1.88	11.84	13.72	11.1	70.2	81.3	+ 3.15	....
17	19.34	1.93	12.99	14.92	10.0	67.1	77.1	+ 4.42	....
18	15.51	3.00	12.67	15.67	19.3	81.7	101.0	.16	....
19	(17.07)	Lost.	(12.78)	....	....	(74.9)	....	....	....
Total	120.69	13.411	....	108.24	11.1	....	89.7	+12.45	....
	(137.76)	....	(107.61)	....	....	(78.1)	....	....	....
Average	17.24	1.916	....	15.46	....	....	....	+ 1.78	....
	(17.22)	....	(13.45)	....	....	....	....	....	....

a No movement.

TABLE L.—*Summary of nitrogen balances for Series III.*

Four men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*P. ct.*	*P. ct.*	*P. ct.*	*Grams.*	*Grams.*
No. 1	163.71	13.38	154.21	167.59	8.2	94.2	102.4	− 3.88	
No. 3	120.34		109.72	121.72		91.1	101.1	− 1.38	
	[134.50]	[13.451]			[10.0]				
No. 4	125.40	9.95		109.36	7.9		87.2	+16.04	
	(142.17)		(111.31)			(78.3)			
No. 5	180.29	13.237	150.28	163.52	7.3	83.4	90.7	+16.77	
Total	589.74			562.19			95.3	+27.55	
	(606.51)		(525.52)			(86.6)			
	[603.90]	[50.018]			[8.3]				
Average	17.87			17.04				+ .83	
	(17.84)		(15.46)						
	[17.76]	[1.471]							
Preservative period.									
First subperiod:									
No. 1	76.40	6.28	70.98	77.26	8.2	92.9	101.1	− 0.86	4.0
No. 3	47.79	3.61		42.68	7.6		89.3	+ 5.11	4.0
	(63.51)		(50.99)			(80.3)			
No. 4	71.45	7.46	63.24	70.70	10.5	88.5	99.0	+ .75	4.0
No. 5	86.01	7.206	68.64	75.85	8.4	79.8	88.2	+10.16	4.0
Total	281.65	24.556		266.49	8.7		94.6	+15.16	16.0
	(297.37)		(253.85)			(85.4)			
Average	18.78	1.637		17.77				+ 1.01	
	(18.59)		(15.87)						
Second subperiod:									
No. 1	68.44	4.73	65.65	70.38	6.9	95.9	102.8	− 1.94	12.0
No. 3	57.51	5.22	40.09	45.31	9.0	69.8	78.8	+12.20	12.0
No. 4	58.94	5.86	46.23	52.09	9.9	78.5	88.4	+ 6.85	12.0
No. 5	75.93	6.69	64.57	71.26	8.8	85.0	93.8	+ 4.67	12.0
Total	260.82	22.50	216.54	239.04	8.6	83.0	91.6	+21.78	48.0
Average	16.30	1.41	13.53	14.94				+ 1.36	
Third subperiod:									
No. 1	67.43	4.14	63.18	67.32	6.1	93.7	99.8	+ 0.11	10.0
No. 3	51.62	4.472	48.96	53.43	8.7	94.8	103.5	− 1.81	11.0
No. 4	48.35	5.97	46.31	52.28	12.3	95.8	108.1	− 3.93	9.7
No. 5	59.46	2.892	56.89	59.78	4.9	95.6	100.5	− .32	11.2
Total	226.86	17.474	215.34	232.81	7.7	94.9	102.6	− 5.95	41.9
Average	14.18	1.092	13.46	14.55				− .37	
Entire preservative period:									
No. 1	212.27	15.15	199.81	214.96	7.2	94.1	101.3	− 2.69	26.0
No. 3	156.92	13.302		141.42	8.5		90.1	+15.50	27.0
	(172.64)		(140.04)			(81.1)			
No. 4	178.74	19.29	155.78	175.07	10.8	87.1	97.9	+ 3.67	25.7
No. 5	221.40	16.79	190.10	206.89	7.6	85.8	93.4	+14.51	27.2
Total	769.33	64.532		738.34	8.4		96.0	+30.99	105.9
	(785.05)		(685.73)			(87.3)			
Average	16.37	1.373		15.71				+ .66	
	(16.36)		(14.29)						
After period.									
No. 1	156.03	10.22	132.68	142.90	6.6	85.0	91.6	+13.13	
No. 3	110.46	9.537		91.24	8.6		82.6	+19.22	
	(128.44)		(91.85)			(71.5)			
No. 4	65.55			48.52			74.0	+17.03	
	(110.28)		(77.10)			(69.9)			
	[82.90]	[6.21]			[7.5]				
No. 5	169.27	11.747	128.12	139.87	6.9	75.7	82.6	+29.40	
Total	501.31			422.53			84.3	+78.78	
	(564.02)		(429.75)			(76.2)			
	[518.66]	[37.714]			[7.3]				
Average	18.57			15.65				+ 2.92	
	(18.19)		(13.86)						
	[18.52]	[1.347]							

TABLE L.—*Summary of nitrogen balances for Series III*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	163.71	13.38	154.21	167.59	8.2	94.2	102.4	− 3.88	......
No. 2	156.45	12.872	137.31	150.18	8.2	87.8	96.0	+ 6.27	......
No. 3	120.34	....	109.72	121.72	......	91.1	101.1	1.38	......
	[134.50]	[13.451]	....	....	[10.0]	......	......	......	......
No. 4	125.40	9.95	....	109.36	7.9	......	87.2	+ 16.04	......
	(142.17)	....	(111.31)	....	......	(78.3)	......	......	......
No. 5	180.29	13.237	150.28	163.52	7.3	83.4	90.7	+ 16.77	......
Total	746.19	....	....	712.37	......	......	95.5	+ 33.82	......
	(762.96)	....	(662.83)	....	......	(86.9)	......	......	......
	[760.35]	[62.890]	....	....	[8.3]	......	......	......	......
Average	17.76	....	....	16.96	......	......	......	+ .80	......
	(17.74)	....	(15.41)	....	......	......	......	......	......
	[17.68]	[1.463]	....	....	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 1	76.40	6.28	70.98	77.26	8.2	92.9	101.1	− 0.86	4.0
No. 2	75.13	5.68	63.48	69.16	7.6	84.5	92.1	+ 5.97	4.0
No. 3	47.79	3.61	....	42.68	7.6	......	89.3	+ 5.11	4.0
	(63.51)	....	(50.99)	....	......	(80.3)	......	......	
No. 4	71.45	7.46	63.24	70.70	10.5	88.5	99.0	+ .75	4.0
No. 5	86.01	7.206	68.64	75.85	8.4	79.8	88.2	+ 10.16	4.0
Total	356.78	30.236	....	335.65	8.5	......	94.1	+ 21.13	20.0
	(372.50)	....	(317.33)	....	......	(85.2)	......	......	
Average	18.78	1.591	....	17.66	......	......	......	+ 1.12	......
	(18.63)	....	(15.87)	....	......	......	......	......	......
Second subperiod:									
No. 1	68.44	4.73	65.65	70.38	6.9	95.9	102.8	− 1.94	12.0
No. 2	48.07	1.545	55.62	57.17	3.2	115.7	118.9	− 9.10	7.0
No. 3	57.51	5.22	40.09	45.31	9.0	69.8	78.8	+ 12.20	12.0
No. 4	58.94	5.86	46.23	52.09	9.9	78.5	88.4	+ 6.85	12.0
No. 5	75.93	6.69	64.57	71.26	8.8	85.0	93.8	+ 4.67	12.0
Total	308.89	24.045	272.16	296.21	7.8	88.1	95.9	+ 12.68	55.0
Average	15.44	1.202	13.61	14.81	......	......	......	+ .63	......
Third subperiod:									
No. 1	67.43	4.14	63.18	67.32	6.1	93.7	99.8	+ 0.11	10.0
No. 2	45.62	4.102	57.46	61.56	9.0	125.9	134.9	−15.94	.0
No. 3	51.62	4.472	48.96	53.43	8.7	94.8	103.5	− 1.81	11.0
No. 4	48.35	5.97	46.31	52.28	12.3	95.8	108.1	− 3.93	9.7
No. 5	59.46	2.892	56.89	59.78	4.9	95.6	100.5	− .32	11.2
Total	272.48	21.576	272.80	294.37	7.9	100.1	108.0	−21.89	41.9
Average	13.62	1.078	13.64	14.72	......	......	......	− 1.10	......
Entire preservative period:									
No. 1	212.27	15.15	199.81	214.96	7.2	94.1	101.3	− 2.69	26.0
No. 2	168.82	11.327	176.56	187.89	6.7	104.6	111.3	−19.07	11.0
No. 3	156.92	13.302	....	141.42	8.5	......	90.1	+15.50	27.0
	(172.61)	....	(140.01)	....	......	(81.1)	......	......	
No. 4	178.74	19.29	155.78	175.07	10.8	87.1	97.9	+ 3.67	25.7
No. 5	221.40	16.79	190.10	206.89	7.6	85.8	93.4	+14.51	27.2
Total	938.15	75.859	....	926.23	8.1	......	98.7	+11.92	116.9
	(953.87)	....	(862.29)	....	......	(90.4)	......	......	
Average	15.90	1.285	....	15.70	......	......	......	+ .20	......
	(15.90)	....	(14.37)	....	......	......	......	......	......

TABLE LI.—*Nitrogen balances for Series IV.*[a]

NO. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	11.77	2.01	6.43	8.44	17.1	54.6	71.7	+ 3.33	....
21	16.39	2.36	12.56	14.92	14.4	76.6	91.0	+ 1.47	....
22	14.53	2.07	10.89	12.96	14.2	75.0	89.2	+ 1.57	....
23	14.54	1.51	12.30	13.81	10.4	84.6	95.0	+ .73	....
24	13.23	1.97	8.31	10.28	14.9	62.8	77.7	+ 2.95	....
25	14.25	1.22	9.88	11.10	8.6	69.3	77.9	+ 3.15	....
26	14.70	3.29	11.47	14.76	22.4	78.0	100.4	− .06	....
27	16.05	1.23	10.44	11.67	7.7	65.0	72.7	+ 4.38	....
Total	115.46	15.66	82.28	97.94	13.6	71.2	84.8	+17.52	....
Average	14.43	1.96	10.28	12.24	....	....	....	+ 2.19	....
Preservative period.									
First subperiod:									
1903—Mar. 28	15.31	2.34	12.95	15.29	15.3	84.6	99.9	+ 0.02	0.5
29	14.82	3.33	10.21	13.54	22.5	68.9	91.4	+ 1.28	.5
30	15.05	2.92	11.75	14.67	19.4	78.1	97.5	+ .38	.5
31	15.09	2.05	11.52	13.57	13.6	76.3	89.9	+ 1.52	.5
Total	60.27	10.64	46.43	57.07	17.7	77.0	94.7	+ 3.20	2.0
Average	15.07	2.66	11.61	14.27	....	....	....	+ .80	....
Second subperiod:									
1903—Apr. 1	13.87	(*b*)	8.64	8.64	....	62.3	62.3	+ 5.23	1.0
2	Dropped.	....	....	....	....	....	....	....	....

[a] The use of the capsule for administering the preservative was experimental in this series, occurring only from April 4 to 14, and the entry of 0.024 gram of nitrogen credited to capsule was not made under nitrogen ingested until Series V. The omission has no appreciable effect on the results.
[b] No movement.

TABLE LI.—*Nitrogen balances for Series IV*—Continued.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	18.13	0.396	13.00	13.40	2.2	71.7	73.9	+ 4.73	....
21	20.34	1.69	14.86	16.55	8.3	73.1	81.4	+ 3.79	....
22	19.87	1.07	14.41	15.48	5.4	72.5	77.9	+ 4.39	....
23	(16.71	Lost.	(12.03)	....	....	(72.0)	....	....	....
24	16.86	(a)	13.20	13.20	....	78.3	78.3	+ 3.66	....
25	17.24	2.26	17.61	19.87	13.1	102.2	115.3	− 2.63	....
26	18.98	2.16	14.84	17.00	11.4	78.2	89.6	+ 1.98	....
27	19.24	(a)	16.99	16.99	....	88.3	88.3	+ 2.25	....
Total	130.66	7.58	....	112.49	5.8	....	86.1	+18.17	....
	(147.37)	....	(116.94)	....	....	(79.4)	....	....	....
Average	18.67	1.08	....	16.07	....	....	....	+ 2.60	....
	(18.42)	....	(14.62)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Mar. 28	18.91	1.40	11.86	13.26	7.4	62.7	70.1	+ 5.65	0.5
29	18.20	2.31	15.26	17.57	12.7	83.8	96.5	+ .63	.5
30	19.37	2.78	16.24	19.02	14.4	83.8	98.2	+ .35	.5
31	17.72	1.78	15.47	17.25	10.0	87.3	97.3	+ .47	.5
Total	74.20	8.27	58.83	67.10	11.1	79.3	90.4	+ 7.10	2.0
Average	18.55	2.07	14.71	16.78	....	....	....	+ 1.77	....
Second subperiod:									
1903—Apr. 1	17.99	(a)	15.19	15.19	....	84.4	84.4	+ 2.80	1.0
2	18.03	2.45	14.20	16.65	13.6	78.7	92.3	+ 1.38	1.0
3	18.33	1.11	14.61	15.72	6.1	79.7	85.8	+ 2.61	1.0
4	18.25	2.19	14.28	16.47	12.0	78.2	90.2	+ 1.78	1.0
Total	72.60	5.75	58.28	64.03	7.9	80.3	88.2	+ 8.57	4.0
Average	18.15	1.44	14.57	16.01	....	....	....	+ 2.14	....
Subperiods 1 and 2:									
Total	146.80	14.02	117.11	131.13	9.5	79.8	89.3	+15.67	6.0
Average	18.35	1.75	14.64	16.39	....	....	....	....	....
Third subperiod:									
1903—Apr. 5	17.32	(a)	13.03	13.03	....	75.2	75.2	+ 4.29	1.0
6	19.14	1.20	17.30	18.50	6.3	90.4	96.7	+ .64	1.0
7	18.15	1.87	15.93	17.80	10.3	87.8	98.1	+ .35	1.0
8	17.48	1.69	14.20	15.89	9.7	81.2	90.9	+ 1.59	1.0
9	18.95	1.36	14.27	15.63	7.2	75.3	82.5	+ 3.32	1.0
Total	91.04	6.12	74.73	80.85	6.7	82.1	88.8	+10.19	5.0
Average	18.21	1.22	14.95	16.17	....	....	....	+ 2.04	....
Subperiods 1, 2, and 3:									
Total	237.84	20.14	191.84	211.98	8.5	80.6	89.1	+25.86	11.0
Average	18.30	1.55	14.76	16.31	....	....	....	+ 1.99	....
Fourth subperiod:									
1903—Apr. 10	18.68	1.40	12.72	14.12	7.5	68.1	75.6	+ 4.56	2.0
11	17.10	1.32	14.37	15.69	7.7	84.0	91.7	+ 1.41	2.0
12	16.52	2.04	12.51	14.55	12.1	75.7	88.1	+ 1.97	2.0
13	17.41	1.35	9.77	11.12	7.8	56.1	63.9	+ 6.29	2.0
14	17.04	1.43	11.92	13.35	8.4	69.9	78.3	+ 3.69	3.0
Total	86.75	7.54	61.29	68.83	8.7	70.6	79.3	+17.92	11.0
Average	17.35	1.51	12.26	13.77	....	....	....	+ 3.58	....
Entire preservative period:									
Total	324.59	27.68	253.13	280.81	8.5	78.0	86.5	+13.78	22.0
Average	18.03	1.54	14.06	15.60	....	....	....	....	....
After period.									
1903—Apr. 15	16.70	1.13	13.57	14.70	6.8	81.2	88.0	+ 2.00	....
16	17.50	1.34	12.30	13.64	7.6	70.3	77.9	+ 3.86	....
17	18.97	1.89	12.96	14.85	10.0	68.3	78.3	+ 4.12	....
18	17.67	1.07	12.93	14.00	6.0	73.2	79.2	+ 3.67	....
19	16.71	2.23	15.13	17.36	13.3	90.5	103.8	− .65	....
20	16.72	2.02	15.50	17.52	12.1	92.7	101.8	− .80	....
21	15.56	(a)	16.06	16.06	....	103.2	103.2	− .50	....
22	15.74	2.85	12.29	15.14	18.1	78.1	96.2	+ .60	....
Total	135.57	12.53	110.71	123.27	9.2	81.7	90.9	+12.30	....
Average	16.95	1.57	13.84	15.41	....	....	....	+ 1.54	....

a No movement.

TABLE LI.—*Nitrogen balances for Series IV*—Continued.

No. 9.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	17.13	1.83	14.28	16.11	10.7	83.3	94.0	+ 1.02	....
21	20.81	.983	16.74	17.72	4.7	80.4	85.1	+ 3.09	....
22	19.58	1.94	15.51	17.45	9.9	79.2	89.1	+ 2.13	....
23	19.04	1.66	14.85	16.51	8.7	78.0	86.7	+ 2.53	....
24	16.86	1.35	16.12	17.47	8.0	95.6	103.6	− .61	....
25	18.09	1.26	17.94	19.20	6.9	99.2	106.1	− 1.11	....
26	18.32	1.60	16.07	17.67	8.8	87.7	96.5	+ .65	....
27	20.03	.857	16.97	17.83	4.3	84.7	89.0	+ 2.20	....
Total	149.86	11.48	128.48	139.96	7.6	85.8	93.4	+ 9.90	....
Average	18.73	1.43	16.06	17.49	....	....	....	+ 1.24	....
Preservative period.									
First subperiod:									
1903—Mar. 28	18.63	1.56	16.40	17.96	8.4	88.0	96.4	+ 0.67	0.5
29	19.39	1.55	17.13	18.68	7.9	88.4	96.3	+ .71	.5
30	19.35	1.48	17.22	18.70	7.6	89.0	96.6	+ .65	.5
31	19.03	1.54	15.94	17.48	8.1	83.8	91.9	+ 1.55	.5
Total	76.40	6.13	66.69	72.82	8.0	87.3	95.3	+ 3.58	2.0
Average	19.10	1.53	16.67	18.20	....	....	....	+ .90	....
Second subperiod:									
1903—Apr. 1	18.32	1.64	15.54	17.18	9.0	84.8	93.8	+ 1.14	1.0
2	18.07	(*a*)	15.73	15.73	....	87.1	87.1	+ 2.34	1.0
3	20.05	2.44	16.30	18.74	12.0	81.5	93.5	+ 1.31	1.0
4	18.53	(*a*)	17.39	17.39	....	93.8	93.8	+ 1.14	1.0
Total	74.97	4.08	64.96	69.04	5.4	86.7	92.1	+ 5.93	4.0
Average	18.74	1.02	16.24	17.26	....	....	....	+ 1.48	....
Subperiods 1 and 2:									
Total	151.37	10.21	131.65	141.86	6.7	87.0	93.7	+ 9.51	6.0
Average	18.92	1.28	16.46	17.73	....	....	....	+ .19	....
Third subperiod:									
1903—Apr. 5	17.80	1.25	15.60	16.85	7.1	87.6	94.7	+ 0.95	1.0
6	18.09	1.73	17.51	19.24	9.6	96.8	106.4	− 1.15	1.0
7	17.83	1.13	17.46	18.59	6.4	97.9	104.3	− .76	1.0
8	17.78	1.85	16.28	18.13	10.4	91.6	102.0	− .35	1.0
9	18.83	.603	17.41	18.01	3.2	92.4	95.6	+ .82	1.0
Total	90.33	6.56	84.26	90.82	7.2	93.3	100.5	− .49	5.0
Average	18.07	1.31	16.85	18.16	....	....	....	− .90	....
Subperiods 1, 2, and 3:									
Total	241.70	16.77	215.91	232.68	6.9	89.3	96.2	+ 9.02	11.0
Average	18.59	1.29	16.61	17.90	....	....	....	+ .69	....
Fourth subperiod:									
1903—Apr. 10	19.17	1.08	17.03	18.11	5.6	88.8	94.4	+ 1.06	2.0
11	17.26	1.86	16.86	18.72	10.8	97.7	108.5	− 1.46	2.0
12	17.83	1.59	16.10	17.69	8.9	90.3	99.2	+ .14	2.0
13	17.57	.942	14.48	15.42	5.4	82.4	87.8	+ 2.15	2.0
14	17.68	1.11	15.42	16.53	6.3	87.2	93.5	+ 1.15	3.0
Total	89.51	6.58	79.89	86.47	7.4	89.2	96.6	+ 3.04	11.0
Average	17.90	1.32	15.98	17.29	....	....	....	+ .61	....
Entire preservative period:									
Total	331.21	23.35	295.80	319.15	7.1	89.3	96.4	+12.06	22.0
Average	18.40	1.29	16.43	17.73	....	....	....	+ .67	....
After period.									
1903—Apr. 15	17.12	0.952	15.13	16.08	5.5	88.4	93.9	+ 1.04	....
16	17.64	1.36	14.65	16.01	7.7	83.1	90.8	+ 1.63	....
17	18.80	1.60	15.98	17.58	8.5	85.0	93.5	+ 1.22	....
18	18.37	1.61	20.33	21.94	8.7	110.7	119.4	− 3.57	....
19	20.01	1.54	14.36	15.90	7.7	71.8	79.5	+ 4.11	....
20	19.27	1.59	17.94	19.53	8.2	93.1	101.3	− .26	....
21	16.84	.472	16.80	17.27	2.8	99.8	102.6	− .43	....
22	15.43	.860	15.93	16.79	5.6	103.2	108.8	− 1.36	....
Total	143.48	9.98	131.12	141.10	6.9	91.4	98.3	+ 2.38	....
Average	17.93	1.25	16.39	17.64	....	....	....	+ .29	....

a No movement.

TABLE LI.—*Nitrogen balances for Series IV*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	17.81	1.64	15.07	16.71	9.2	84.6	93.8	+ 1.10	....
21	20.70	1.65	16.63	18.28	8.0	80.3	88.3	+ 2.42	....
22	17.55	1.29	16.39	17.68	7.3	93.4	100.7	− .13	....
23	14.13	1.27	15.46	16.73	9.0	109.4	118.4	− 2.60	....
24	13.15	1.46	15.55	17.01	11.1	118.3	129.4	− 3.86	....
25	17.44	1.58	19.25	20.83	9.0	110.4	119.4	− 3.39	....
26	18.82	1.61	18.01	19.62	8.6	95.7	104.3	− .80	....
27	19.83	1.78	16.40	18.18	9.0	82.7	91.7	+ 1.65	....
Total	139.43	12.28	132.76	145.04	8.8	95.2	104.0	− 5.61	....
Average	17.43	1.54	16.59	18.13	....	....	....	− .70	....
Preservative period.									
First subperiod:									
1903—Mar. 28	18.94	2.41	17.30	19.71	12.7	91.3	104.0	− 0.77	0.5
29	18.75	2.32	16.28	18.60	12.4	86.8	99.2	+ .15	.5
30	18.64	1.43	15.83	17.26	7.7	84.9	92.6	+ 1.38	.5
31	18.15	2.98	15.52	18.50	16.4	85.5	101.9	− .35	.5
Total	74.48	9.14	64.93	74.07	12.2	87.2	99.4	+ .41	2.0
Average	18.62	2.29	16.23	18.52	....	....	....	+ .10	....
econd subperiod:									
1903—Apr. 1	17.94	1.30	15.63	16.93	7.3	87.1	94.4	+ 1.01	1.0
2	18.11	2.17	11.89	14.06	12.0	65.6	77.6	+ 4.05	1.0
3	19.21	1.54	19.10	20.64	8.0	99.4	107.4	− 1.43	1.0
4	18.29	1.21	14.78	15.99	6.6	80.8	87.4	+ 2.30	1.0
Total	73.55	6.22	61.40	67.62	8.4	83.5	91.9	+ 5.93	4.0
Average	18.39	1.56	15.35	16.91	....	....	....	+ 1.48	....
Subperiods 1 and 2:									
Total	148.03	15.36	126.33	141.69	10.4	85.3	95.7	+ 6.34	6.0
Average	18.50	1.92	15.79	17.71	....	....	....	+ .79	....
Third subperiod:									
1903—Apr. 5	17.77	1.51	15.35	16.86	8.5	86.4	94.9	+ 0.91	1.0
6	18.25	1.43	12.80	14.23	7.8	70.2	78.0	+ 4.02	1.0
7	18.01	1.60	17.34	18.94	8.9	96.3	105.2	− .93	1.0
8	16.91	1.70	14.30	16.00	10.0	84.6	94.6	+ .91	1.0
9	18.85	1.60	13.37	14.97	8.5	70.9	79.4	+ 3.88	1.0
Total	89.79	7.81	73.16	81.00	8.7	81.5	90.2	+ 8.79	5.0
Average	17.96	1.57	14.63	16.20	....	....	....	+ 1.76	....
Subperiods 1, 2, and 3:									
Total	237.82	23.20	199.49	222.69	9.8	83.8	93.6	+15.13	11.0
Average	18.29	1.78	15.35	17.13	....	....	....	+ 1.16	....
Fourth subperiod:									
1903—Apr. 10	19.01	0.461	12.72	13.18	2.4	66.9	69.3	+ 5.83	2.0
11	18.06	2.91	16.54	19.45	16.1	91.6	107.7	− 1.39	2.0
12	17.45	1.60	15.25	16.85	9.2	87.4	96.6	+ .60	2.0
13	17.05	.695	13.45	14.14	4.0	78.9	82.9	+ 2.91	2.0
14	18.06	2.66	10.08	12.74	14.7	55.8	70.5	+ 5.32	3.0
Total	89.63	8.329	68.04	76.36	9.3	75.9	85.2	+13.27	11.0
Average	17.93	16.66	13.61	15.27	....	....	....	+ 2.66	....
Entire preservative period:									
Total	327.45	31.52	267.53	299.05	9.6	81.7	91.3	+28.40	22.0
Average	18.19	1.75	14.86	16.61	....	....	....	+ 1.58	....
After period.									
1903—Apr. 15	....	....	....	....	....	....	....	....	....
16	....	....	....	....	....	....	....	....	....
17	9.71	0.770	12.79	13.56	7.9	131.7	139.6	− 3.85	....
18	13.49	(a)	10.37	10.37	....	76.9	76.9	+ 3.12	....
19	16.08	(a)	14.17	14.17	....	88.1	88.1	+ 1.91	....
20	18.84	2.16	12.85	15.01	11.5	68.2	79.7	+ 3.83	....
21	17.02	1.74	19.22	20.96	10.2	112.9	123.1	− 3.94	....
22	16.56	2.52	11.55	14.07	15.2	69.8	85.0	+ 2.49	....
Total	91.70	7.19	80.95	88.14	7.8	88.3	96.1	+ 3.56	....
Average	15.28	1.20	13.49	14.69	....	....	....	+ .59	....

a No movement.

TABLE LI.—*Nitrogen balances for Series IV*—Continued.

No. 11.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	17.86	1.44	12.42	13.86	8.1	69.5	77.6	+ 4.00	....
21	16.90	.954	13.50	14.45	5.6	79.9	85.5	+ 2.45	....
22	17.90	1.42	16.33	17.75	8.0	91.2	99.2	+ .15	....
23	(14.85)	Lost.	(13.06)	....	....	(87.9)	....	....	....
24	15.02	.569	18.69	19.26	3.8	124.4	128.2	− 4.24	....
25	13.98	1.77	15.48	17.25	12.7	110.7	123.4	− 3.27	....
26	17.13	.796	13.43	14.23	4.7	78.4	83.1	+ 2.90	....
27	18.47	1.32	15.01	16.33	7.1	81.3	88.4	+ 2.14	....
Total	117.26 (132.11)	8.27	.... (117.92)	113.13	7.1	.... (89.3)	96.5	+ 4.13	....
Average	16.75 (16.51)	1.18	.... (14.74)	16.16	....	....	....	+ .59	....
Preservative period.									
First subperiod (excluded):									
1903—Mar. 28	15.92	1.51	14.45	15.96	9.5	90.8	100.3	− 0.04	0.5
29	17.10	1.13	15.96	17.09	6.6	93.3	99.9	+ .01	.5
30	2.59	2.85	10.35	13.20	110.1	399.6	509.7	−10.61	.0
Total	35.61	5.49	40.76	46.25	15.4	114.5	129.9	−10.64	1.0
Average	11.87	1.83	13.59	15.42	....	....	....	− 3.55	....
Fore period.									
1903—Mar. 31	4.33	(*a*)	11.25	11.25	....	259.8	259.8	− 6.92	0.0
Apr. 1	8.52	1.22	8.17	9.39	14.3	95.9	110.2	− .87	.0
2	10.63	.508	11.93	12.44	4.8	112.2	117.0	− 1.81	.0
3	16.53	.952	11.56	12.51	5.8	69.9	75.7	+ 4.02	.0
Total	40.01	2.68	42.91	45.59	6.7	107.2	113.9	− 5.58	.0
Average	10.00	.67	10.73	11.40	....	....	....	− 1.40	....
Preservative period.									
1903—Apr. 4	14.20	1.76	14.11	15.87	12.4	99.4	111.8	− 1.67	0.5
5	16.64	1.19	14.58	15.77	7.2	87.6	94.8	+ .87	1.0
6	13.67	1.29	11.44	12.73	9.4	83.7	93.1	+ .94	1.0
7	16.55	1.99	14.36	16.35	12.0	86.8	98.8	+ .20	1.0
8	13.92	1.06	12.66	13.72	7.6	91.0	98.6	+ .20	1.0
9	14.78	1.49	12.04	13.53	10.0	81.5	91.5	+ 1.25	1.0
10	17.56	.894	14.00	14.89	5.1	79.7	84.8	+ 2.67	1.0
11	14.07	1.57	13.86	15.43	11.2	98.5	109.7	− 1.36	1.0
12	15.88	1.72	13.85	15.57	10.8	87.2	98.0	+ .31	2.0
13	14.03	1.52	13.88	15.40	10.9	98.9	109.8	− 1.37	2.0
14	14.90	1.08	12.97	14.05	7.2	87.0	94.2	+ .85	3.0
Total	166.20	15.56	147.75	163.31	9.4	88.9	98.3	+ 2.89	14.5
Average	15.11	1.42	13.43	14.85	....	....	....	+ .26	....
After period.									
1903—Apr. 15	14.20	0.584	12.07	12.65	4.1	85.0	89.1	+ 1.55	....
16	13.41	.588	11.93	12.52	4.4	89.0	93.4	+ .89	....
17	16.14	(*a*)	13.10	13.10	....	81.2	81.2	+ 3.04	....
18	18.09	3.52	14.34	17.86	19.4	79.3	98.7	+ .23	....
19	14.44	.518	12.76	13.28	3.6	88.4	92.0	+ 1.16	....
20	14.53	1.53	12.33	13.86	10.5	84.9	95.4	+ .67	....
21	15.70	.437	14.61	15.05	2.8	93.1	95.9	+ .65	....
22	13.85	1.20	12.96	14.16	8.6	93.6	102.2	− .31	....
Total	120.36	8.38	104.10	112.48	7.0	86.5	93.5	+ 7.88	....
Average	15.04	1.05	13.01	14.06	....	....	....	+ .98	....

a No movement.

TABLE LI.—*Nitrogen balances for Series IV*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	13.68	1.76	12.21	13.97	12.9	89.2	102.1	− 0.29	....
21	16.72	2.97	15.30	18.27	17.8	91.5	109.3	− 1.55	....
22	18.37	.773	14.74	15.51	4.2	80.2	84.4	+ 2.86	....
23	14.78	2.36	15.73	18.09	16.1	106.3	122.4	− 3.31	....
24	14.31	1.79	12.42	14.21	12.5	86.8	99.3	+ .10	....
25	16.63	2.01	13.27	15.28	12.1	79.8	91.9	+ 1.35	....
26	16.90	1.65	15.56	17.21	9.7	92.1	101.8	− .31	....
27	17.93	2.40	13.86	16.26	13.5	77.2	90.7	+ 1.67	....
Total	129.32	15.71	113.09	128.80	12.1	87.5	99.6	+ .52	....
Average	16.16	19.6	14.14	16.10	....	....	....	+ .6	....
First subperiod (excluded):									
1903—Mar. 28	17.06	1.35	13.63	14.98	7.9	80.0	87.9	+ 2.08	0.5
29	16.50	1.86	14.30	16.16	11.3	86.6	97.9	+ .34	.5
30	17.33	3.18	12.31	15.49	18.4	71.0	89.4	+ 1.84	.5
31	(*a*)	....	....	....	....	....	....	....	.5
Total	50.89	6.39	40.24	46.63	12.5	79.2	91.7	+ 4.26	2.0
Average	16.96	2.13	13.41	15.54	....	....	....	+ 1.42	....
Fore period.									
1903—Apr. 3	12.52	1.37	11.70	13.07	10.9	93.4	104.3	− 0.55	0.0
4	16.39	1.32	11.96	13.28	8.1	72.9	81.0	+ 3.11	.0
5	17.05	1.72	13.23	14.95	10.1	77.6	87.7	+ 2.10	.0
Total	45.96	4.41	36.89	41.30	9.6	80.3	89.9	+ 4.66	.0
Average	15.32	1.47	12.30	13.77	....	....	....	+ 1.55	....
Preservative period.									
1903—Apr. 6	16.38	1.66	14.25	15.91	10.1	87.0	97.1	+ 0.47	1.0
7	16.06	1.87	13.79	15.66	11.6	85.9	97.5	+ .40	1.0
8	16.35	.434	12.05	12.48	2.6	73.7	76.3	+ 3.87	1.0
9	16.83	.528	14.02	14.55	3.2	83.3	86.5	+ 2.28	1.0
10	13.73	1.10	13.25	14.35	8.0	96.5	104.5	− .62	1.0
11	13.88	(*b*)	10.21	10.21	....	73.6	73.6	+ 3.67	1.0
12	15.35	2.14	13.23	15.37	13.9	86.2	100.1	− .02	2.0
13	15.21	2.02	12.04	14.06	....	....	92.4	+ 1.15	2.0
14	15.38	1.37	13.22	14.59	9.0	85.9	94.9	+ .79	3.0
Total	139.17	11.12	116.06	127.18	8.0	83.4	91.4	+11.99	13.0
Average	15.46	1.24	12.89	14.13	....	....	....	+ 1.33	....
After period.									
1903—Apr. 15	4.74	(*b*)	7.63	7.63	....	161.0	161.0	2.89	....
16	6.55	1.67	12.24	13.91	25.5	186.9	212.4	7.36	....
17	15.81	.943	9.49	10.43	6.0	60.0	66.0	+ 5.38	....
18	17.55	2.82	12.60	15.42	16.1	71.8	87.9	+ 2.13	....
19	16.76	1.79	11.39	13.18	10.6	68.0	78.6	+ 3.58	....
20	17.06	2.74	10.89	13.63	16.1	63.8	79.9	+ 3.43	....
21	14.05	.905	10.86	11.76	6.4	77.3	83.7	+ 2.29	....
22	13.31	1.20	12.03	13.23	9.0	90.4	99.4	+ .08	....
Total	105.83	12.06	87.13	99.19	11.4	82.3	93.7	+ 6.64	....
Average	13.23	1.51	10.89	12.39	....	....	....	+ .81	....

a Discarded. *b* No movement.

TABLE LII.—*Summary of nitrogen balances for Series IV.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax ad-minis-tered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 8	130.66	7.58	......	112.49	5.8	......	86.1	+18.17	......
	(147.37)	......	(116.94)	......	......	(79.4)	......	......	......
No. 9	149.86	11.48	128.48	139.96	7.6	85.8	93.4	+ 9.90	......
No. 10	139.43	12.28	132.76	145.04	8.8	95.2	104.0	− 5.61	......
Total	419.95	31.34	......	397.49	7.5	......	94.7	+22.46	......
	(436.66)	......	(378.18)	......	......	(86.6)	......	......	......
Average	18.26	1.36	......	17.28	......	......	......	+ .98	......
	(18.19)	......	(15.76)	......	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 8	74.20	8.27	58.83	67.10	11.1	79.3	90.4	+ 7.10	2.0
No. 9	76.40	6.13	66.69	72.82	8.0	87.3	95.3	+ 3.58	2.0
No. 10	74.48	9.14	64.93	74.07	12.2	87.2	99.4	+ .41	2.0
Total	225.08	23.54	190.45	213.99	10.5	84.6	95.1	+11.09	6.0
Average	18.76	1.96	15.87	17.83	......	......	......	+ .93	......
Second subperiod:									
No. 8	72.60	5.75	58.28	64.03	7.9	80.3	88.2	+ 8.57	4.0
No. 9	74.97	4.08	64.96	69.04	5.4	86.7	92.1	+ 5.93	4.0
No. 10	73.55	6.22	61.40	67.62	8.4	83.5	91.9	+ 5.93	4.0
Total	221.12	16.05	184.64	200.69	7.3	83.5	90.8	+20.43	12.0
Average	18.43	1.34	15.38	16.72	......	......	......	+ 1.71	......
Subperiods 1 and 2:									
No. 8	146.80	14.02	117.11	131.13	9.5	79.8	89.3	+15.67	6.0
No. 9	151.37	10.21	131.65	141.86	6.7	87.0	93.7	+ 9.51	6.0
No. 10	148.03	15.36	126.33	141.69	10.4	85.3	95.7	+ 6.34	6.0
Total	446.20	39.59	375.09	414.68	8.9	84.0	92.9	+31.52	18.0
Average	18.59	1.65	15.63	17.28	......	......	......	+ 1.31	......
Third subperiod:									
No. 8	91.04	6.12	74.73	80.85	6.7	82.1	88.8	+10.19	5.0
No. 9	90.33	6.56	84.26	90.82	7.2	93.3	100.5	− .49	5.0
No. 10	89.79	7.84	73.16	81.00	8.7	81.5	90.2	+ 8.79	5.0
Total	271.16	20.52	232.15	252.67	7.6	85.6	93.2	+18.49	15.0
Average	18.08	1.37	15.47	16.84	......	......	......	+ 1.24	......
Subperiods 1, 2, and 3:									
No. 8	237.84	20.14	191.84	211.98	8.5	80.6	89.1	+25.86	11.0
No. 9	241.70	16.77	215.91	232.68	6.9	89.3	96.2	+ 9.02	11.0
No. 10	237.82	23.20	199.49	222.69	9.8	83.8	93.6	+15.13	11.0
Total	717.36	60.11	607.24	667.35	8.4	84.6	93.0	+50.01	33.0
Average	18.39	1.54	15.57	17.11	......	......	......	+ 1.28	......
Fourth subperiod:									
No. 8	86.75	7.54	61.29	68.83	8.7	70.6	79.3	+17.92	11.0
No. 9	89.51	6.58	79.89	86.47	7.4	89.2	96.6	+ 3.04	11.0
No. 10	89.63	8.32	68.04	76.36	9.3	75.9	85.2	+13.27	11.0
Total	265.89	22.44	209.22	231.66	8.4	78.7	87.1	+34.23	33.0
Average	17.73	1.49	13.95	15.44	......	......	......	+ 2.29	......
Entire preservative period:									
No. 8	324.59	27.68	253.13	280.81	8.5	78.0	86.5	+43.78	22.0
No. 9	331.21	23.35	295.80	319.15	7.1	89.3	96.4	+12.06	22.0
No. 10	327.45	31.52	267.53	299.05	9.6	81.7	91.3	+28.40	22.0
Total	983.25	82.55	816.46	899.01	8.4	83.0	91.4	+84.24	66.0
Average	18.21	1.53	15.12	16.65	......	......	......	+ 1.56	......
After period.									
No. 8	135.57	12.53	110.74	123.27	9.2	81.7	90.9	+12.30	......
No. 9	143.48	9.98	131.12	141.10	6.9	91.4	98.3	+ 2.38	......
No. 10	91.70	7.19	80.95	88.14	7.8	88.3	96.1	+ 3.56	......
Total	370.75	29.70	322.81	352.51	8.0	87.1	95.1	+18.24	......
Average	16.85	1.35	14.67	16.02	......	......	......	+ .83	......

TABLE LII.—*Summary of nitrogen balances for Series IV*—Continued.

Two men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 11	40.01	2.68	42.91	45.59	6.7	107.2	113.9	− 5.58	....
No. 12	45.96	4.41	36.89	41.30	9.6	80.3	89.9	+ 4.66	....
Total	85.97	7.09	79.80	86.89	8.2	92.8	101.1	− .92	....
Average	12.28	1.01	11.40	12.41	......	......	......	− .13	....
Preservative period.									
No. 11	166.20	15.56	147.75	163.31	9.4	88.9	98.3	+ 2.89	14.5
No. 12	139.17	11.12	116.06	127.18	8.0	83.4	91.4	+11.99	13.0
Total	305.37	26.68	263.81	290.49	8.7	86.4	95.1	+14.88	27.5
Average	15.27	1.33	13.19	14.52	......	......	......	+ .75	....
After period.									
No. 11	120.36	8.38	104.10	112.48	7.0	86.5	93.5	+ 7.88	....
No. 12	105.83	12.06	87.13	99.19	11.4	82.3	93.7	+ 6.64	....
Total	226.19	20.44	191.23	211.67	9.0	84.5	93.6	+14.52	....
Average	14.14	1.28	11.95	13.23	......	......	......	+ .91	....

Five men.

Period.	1	2	3	4	5	6	7	8	9
Fore period.									
No. 7	115.46	15.66	82.28	97.94	13.6	71.2	84.8	+17.52	....
No. 8	130.66	7.58	....	112.49	5.8	....	86.1	+18.17	....
	(147.37)	....	(116.94)	....	......	(79.4)	......	....	....
No. 9	149.86	11.48	128.48	139.96	7.6	85.8	93.4	+ 9.90	....
No. 10	139.43	12.28	132.76	145.04	8.8	95.2	104.0	+ 5.61	....
No. 12	129.32	15.71	113.09	128.80	12.1	87.5	99.6	+ .52	....
Total	664.73	62.71	....	624.23	9.4	....	93.9	+40.50	....
	(681.44)	....	(573.55)	....	......	(84.2)	......	....	....
Average	17.04	1.61	....	16.01	......	....	......	+ 1.03	....
	(17.04)	....	(14.34)	....	......	......	......	....	....
Preservative period.									
First subperiod:									
No. 7	60.27	10.64	46.43	57.07	17.7	77.0	94.7	+ 3.20	2.0
No. 8	74.20	8.27	58.83	67.10	11.1	79.3	90.4	+ 7.10	2.0
No. 9	76.40	6.13	66.69	72.82	8.0	87.3	95.3	+ 3.58	2.0
No. 10	74.48	9.14	64.93	74.07	12.2	87.2	99.4	+ .41	2.0
No. 12	50.89	6.39	40.24	46.63	12.5	79.2	91.7	+ 4.26	2.0
Total	336.24	40.57	277.12	317.69	12.1	82.4	94.5	+18.55	10.0
Average	17.70	2.14	14.59	16.73	......	......	......	+ .97	....

TABLE LIII.—*Nitrogen balances for Series V.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	....	....	....	....	....	....	....	....	....
25	18.03	1.18	17.07	18.25	6.5	94.7	101.2	− 0.22	....
26	17.55	.969	17.20	18.169	5.5	98.0	103.5	− .619	....
27	17.66	1.12	16.91	18.03	6.3	95.8	102.1	− .37	....
28	16.63	1.21	16.51	17.72	7.3	99.3	106.6	− 1.09	....
29	17.60	1.15	16.38	17.53	6.5	93.1	99.6	+ .07	....
30	17.57	.989	17.60	18.589	5.6	100.2	105.8	− 1.019	....
May 1	17.00	2.07	17.10	19.17	12.2	100.6	112.8	− 2.17	....
Total	122.04	8.688	118.77	127.46	7.1	97.3	104.4	− 5.42	....
Average	17.43	1.24	16.97	18.21	....	....	....	− .78	....
Preservative period.									
First subperiod:									
1903—May 2	18.22	2.17	17.25	19.42	11.9	94.7	106.6	− 1.20	0.5
3	19.03	.620	18.09	18.710	3.3	95.1	98.3	+ .32	.5
4	20.11	1.69	16.72	18.41	8.4	83.1	91.5	+ 1.70	.5
5	17.84	1.12	16.65	17.77	6.3	93.3	99.6	+ .07	.5
6	17.20	1.55	17.36	18.91	9.0	100.9	109.9	− 1.71	.5
7	19.91	2.19	17.24	19.43	11.0	86.6	97.6	+ .48	.5
8	17.61	.993	16.49	17.483	5.6	93.6	99.3	+ .127	.5
9	17.74	1.75	16.24	17.99	9.9	91.5	101.4	− .25	.5
10	19.60	2.00	16.64	18.64	10.2	84.9	95.1	+ .96	.5
11	18.34	1.29	16.27	17.56	7.0	88.7	95.7	+ .78	.5
12	19.15	1.57	17.46	19.03	8.2	91.2	99.4	+ .12	.5
13	17.43	1.18	15.91	17.09	6.8	91.3	98.0	+ .34	.5
Total	222.18	18.12	202.32	220.44	8.2	91.1	99.2	+ 1.74	6.0
Average	18.52	1.51	16.86	18.37	....	....	....	+ .15	....
Second subperiod:									
1903—May 14	18.00	1.28	18.01	19.29	7.1	100.1	107.2	− 1.29	0.5
15	17.02	1.94	16.00	17.94	11.4	94.0	105.4	− .92	.5
16	18.07	1.80	17.06	18.86	10.0	94.4	104.4	− .79	.5
17	18.90	.505	16.35	16.855	2.7	86.5	89.2	+ 2.045	.5
18	17.96	1.10	16.57	17.67	6.1	92.3	98.4	+ .29	.5
19	18.08	1.28	16.93	18.21	7.1	93.6	100.7	− .13	.5
20	20.50	1.72	15.77	17.49	8.4	76.9	85.3	+ 3.01	.5
21	19.57	1.18	17.14	18.32	6.0	87.6	93.6	+ 1.25	.5
22	18.19	1.20	17.18	18.38	6.6	94.4	107.0	− .19	.5
23	18.55	1.18	17.71	18.89	6.4	95.5	101.8	− .34	.5
24	18.52	1.41	17.09	18.50	7.6	92.3	99.9	+ .02	.5
25	18.31	1.14	17.72	18.86	6.2	96.8	103.0	− .55	.5
Total	221.67	15.73	203.53	219.26	7.1	91.8	98.9	+ 2.41	6.0
Average	18.46	1.31	16.96	18.27	....	....	....	+ .19	....
Subperiods 1 and 2:									
Total	443.85	35.85	405.85	439.70	7.6	91.4	99.1	+ 4.15	12.0
Average	18.49	1.41	16.91	18.32	....	....	....	+ .17	....
Third subperiod:									
1903—May 26	19.48	1.73	16.95	18.68	8.9	87.0	95.9	+ 0.80	0.5
27	17.93	1.00	18.20	19.20	5.6	101.5	107.1	− 1.27	.5
28	17.98	1.58	17.44	19.02	8.8	97.0	105.8	− 1.04	.5
29	19.05	1.27	17.12	18.39	6.7	89.9	96.5	+ .66	.5
30	20.03	1.21	17.43	18.64	6.0	87.0	93.1	+ 1.39	.5
31	(18.46)	Lost.	(16.21)	....	....	(87.8)	....	....	.5
June 1	19.65	2.38	17.44	19.82	12.1	88.8	100.9	− .17	.5
2	18.47	.348	17.74	18.088	1.9	96.0	97.9	+ 3.82	.5
3	18.78	1.53	17.47	19.00	8.1	93.0	101.2	− .22	.5
4	20.73	1.35	19.06	20.41	6.5	91.9	98.5	+ .32	.5
5	19.98	1.63	17.20	18.83	8.2	86.1	94.2	+ 1.15	.5
6	19.05	1.44	18.29	19.73	7.6	96.0	103.6	− .68	.5
Total	211.13 (229.59)	15.47	.... (210.55)	209.81	7.3	.... (91.7)	99.4	+ 1.32	6.0
Average	19.19 (19.13)	1.41	.... (17.55)	19.07	....	....	....	+ .12	....

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 1—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	654.98	49.32	....	649.51	7.5	....	99.2	+ 5.47	18.0
	(673.44)	....	(616.40)	....	....	(91.5)	....	....	
Average	18.71	1.41	....	18.56	....	....	....	+ .15	....
	(18.71)	....	(17.12)	....	....	....	....	....	....
Fourth subperiod:									
1903—June 7	18.84	1.18	17.36	18.54	6.3	92.1	98.4	+ 0.30	0.5
8	18.18	1.38	16.52	17.90	7.6	90.9	98.5	+ .28	.5
9	18.40	1.67	15.51	17.18	9.1	84.3	93.4	+ 1.22	.5
10	18.99	1.64	16.40	18.04	8.6	86.4	95.0	+ .95	.5
11	18.88	1.78	17.17	18.95	9.4	90.9	100.4	− .07	.5
12	18.86	2.18	17.18	19.36	11.6	91.1	102.7	− .50	.5
13	18.44	1.72	17.87	19.59	9.3	96.9	106.2	− 1.15	.5
14	18.07	.994	17.74	18.73	5.5	98.2	103.7	− .66	.5
15	19.19	.875	17.93	18.80	4.6	93.4	98.0	+ .39	.5
16	17.95	1.98	17.57	19.55	11.0	97.9	108.9	− 1.60	.5
17	18.37	1.57	16.43	18.00	8.5	89.4	98.0	+ .37	.5
18	19.14	2.00	17.20	19.20	10.4	89.9	100.3	− .06	.5
19	20.35	2.53	16.69	19.22	12.4	82.0	94.4	+ 1.13	.5
20	17.29	1.55	15.94	17.49	9.0	92.2	101.2	− .20	.5
Total	260.95	23.049	237.51	260.55	8.8	91.0	99.8	+ .46	7.0
Average	18.64	1.646	16.97	18.61	....	....	....	+ .03	....
Entire preservative period:									
Total	915.93	72.369	....	910.06	7.9	....	99.4	+ 5.87	25.0
	(934.39)	....	(853.91)	....	....	(91.4)	....	....	
Average	18.69	1.48	....	18.57	....	....	....	+ .12	....
	(18.69)	....	(17.08)	....	....	....	....	....	....
After period.									
1903—June 21	18.78	2.32	17.54	19.86	12.4	93.4	105.8	− 1.08	....
22	18.48	1.05	15.58	16.63	5.7	84.3	90.0	+ 1.85	....
23	18.79	2.17	16.37	18.54	11.5	87.1	98.7	+ .25	....
24	17.47	2.02	17.55	19.57	11.6	100.5	112.0	− 2.10	....
25	18.76	1.61	17.12	18.73	8.6	91.3	99.8	+ .03	....
26	17.62	2.58	15.91	18.49	14.7	90.4	105.1	− .87	....
27	(17.44)	Lost.	(17.02)	....	....	(97.6)	....	....	....
28	20.61	1.63	17.22	18.85	7.9	83.6	91.5	+ 1.76	....
29	18.15	1.49	18.00	19.49	8.2	99.2	107.4	− 1.34	....
Total	148.66	14.87	....	150.16	10.0	....	101.0	− 1.50	....
	(166.10)	....	(152.31)	....	....	(91.7)	....	....	....
Average	18.58	1.86	....	18.77	....	....	....	− .19	....
	(18.46)	....	(16.92)	....	....	....	....	....	....

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	16.33	1.51	14.11	15.62	9.2	86.4	95.6	+ 0.71	....
25	18.44	1.53	15.58	17.11	8.3	84.5	92.8	+ 1.33	....
26	16.47	1.37	14.06	15.43	8.3	85.4	93.7	+ 1.04	....
27	17.14	(*a*)	15.13	15.13	....	88.3	88.3	+ 2.01	....
28	(15.99)	Lost.	(15.04)	....	....	94.1	....	....	....
29	17.21	.773	15.03	15.80	4.5	87.3	91.8	+ 1.41	....
30	15.89	.907	14.40	15.31	5.7	90.6	96.3	+ .58	....
May 1	16.42	1.15	14.38	15.53	7.0	87.6	94.6	+ .89	....
Total	117.90	7.240	....	109.93	6.1	....	93.2	+ 7.97	....
	(133.89)	....	(117.73)	....	....	(87.9)	....	....	....
Average	16.84	1.03	....	15.70	....	....	....	+ 1.14	....
	(16.74)	....	(14.72)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—May 2	16.28	1.43	15.09	16.52	8.8	92.7	101.5	− 0.24	0.5
3	17.15	1.51	14.71	16.22	8.8	85.8	94.6	+ .93	.5
4	20.39	.926	16.62	17.55	4.5	81.5	86.1	+ 2.84	.5
5	16.27	1.03	14.70	15.73	6.3	90.3	96.7	+ .54	.5
6	18.25	1.23	16.29	17.52	6.7	89.3	96.0	+ .73	.5
7	18.79	1.65	13.34	14.99	8.8	71.0	79.8	+ 3.80	.5
8	14.36	1.35	13.94	15.29	9.4	97.1	106.5	− .93	.5
9	16.52	.982	13.92	14.90	5.9	84.3	90.2	+ 1.62	.5
10	17.16	1.24	12.31	13.55	7.2	71.7	79.0	+ 3.61	.5
11	16.93	1.57	12.94	14.51	9.3	76.4	85.7	+ 2.42	.5
12	18.24	1.30	14.79	16.09	7.1	81.1	88.2	+ 2.15	.5
13	15.26	1.14	12.99	14.13	7.5	85.1	92.6	+ 1.13	.5
Total	205.60	15.358	171.64	187.00	7.5	83.5	91.0	+18.60	6.0
Average	17.13	1.28	14.30	15.58	....	....	....	+ 1.55	....
Second subperiod:									
1903—May 14	16.82	1.31	14.18	15.49	7.8	84.3	92.1	+ 1.33	0.5
15	15.01	1.41	13.37	14.78	9.4	89.1	98.5	+ .23	.5
16	17.74	1.27	15.12	16.39	7.2	85.2	92.4	+ 1.35	.5
17	14.63	1.02	13.26	14.28	7.0	90.6	97.6	+ .35	.5
18	16.97	1.22	14.41	15.63	7.2	84.9	92.1	+ 1.34	.5
19	14.99	1.76	13.16	14.92	11.7	87.8	99.5	+ .07	.5
20	16.03	1.07	14.06	15.13	6.7	87.7	94.4	+ .90	.5
21	20.80	1.09	12.78	13.87	5.2	61.4	66.7	+ 6.93	.5
22	15.06	1.07	12.52	13.59	7.1	83.1	90.2	+ 1.47	.5
23	16.26	1.61	13.92	15.53	9.9	85.6	95.5	+ .73	.5
24	12.71	1.04	12.46	13.50	8.2	98.0	106.2	− .79	.5
25	15.35	1.22	12.71	13.93	7.9	82.8	90.7	+ 1.42	.5
Total	192.37	15.09	161.95	177.04	7.8	84.2	92.0	+15.33	6.0
Average	16.03	1.26	13.50	14.75	....	....	....	+ 1.28	....
Subperiods 1 and 2:									
Total	397.97	30.448	333.59	364.04	7.7	83.8	91.5	+33.93	12.0
Average	16.58	1.27	13.90	15.17	....	....	....	+ 1.41	....
Third subperiod:									
1903—May 26	15.76	1.55	13.87	15.42	9.8	88.0	97.8	+ 0.34	0.5
27	15.26	1.07	13.78	14.85	7.0	90.3	97.3	+ .41	.5
28	14.06	1.82	11.89	13.71	12.9	84.6	97.5	+ .35	.5
29	14.28	.624	13.58	14.20	4.4	95.1	99.4	+ .08	.5
30	16.29	.994	14.34	15.33	6.1	88.0	94.1	+ .96	.5
31	13.89	.987	13.80	14.79	7.1	99.3	106.5	− .90	.5
June 1	15.00	1.67	13.04	14.71	11.1	86.9	98.1	+ .29	.5
2	13.60	.941	11.34	12.28	6.9	83.4	90.3	+ 1.32	.5
3	8.68	1.15	11.00	12.15	13.2	126.7	140.0	− 3.47	.5
4	11.19	.893	10.68	11.57	8.0	95.4	103.4	− .38	.5
5	8.16	.632	9.85	10.48	7.7	120.7	128.4	− 2.32	.5
6	10.92	1.34	12.24	13.58	12.3	112.1	124.4	− 2.66	.5
Total	157.09	13.67	149.41	163.07	8.7	95.1	103.8	− 5.98	6.0
Average	13.09	1.14	12.45	13.59	....	....	....	− .50	....

a No movement.

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 2—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	555.06	44.12	483.00	527.11	7.9	87.0	95.0	+27.95	18.0
Average	15.42	1.23	13.42	14.64	....	....	....	+ .78	....
Fourth subperiod:									
1903—June 7	10.28	1.19	9.71	10.90	11.6	94.4	106.0	− 0.62	0.5
8	11.78	.307	10.14	10.45	2.6	86.1	88.7	+ 1.33	.5
9	10.30	1.56	8.77	10.33	15.1	85.1	100.3	− .03	.5
10	11.91	.834	10.43	11.26	7.0	87.6	94.5	+ .65	.5
11	11.81	.760	10.90	11.66	6.4	92.3	98.7	+ .15	.5
12	11.82	.845	9.94	10.78	7.1	84.1	91.2	+ 1.04	.0
13	12.23	1.07	11.16	12.23	8.7	91.2	100.0	± .00	.0
14	11.41	.399	10.82	11.22	3.5	94.8	98.3	+ .19	.0
15	14.92	.982	10.10	11.08	6.6	67.7	74.3	+ 3.84	.0
16	11.86	.954	13.67	14.62	8.0	115.3	123.3	− 2.76	.0
17	13.21	1.55	12.42	13.97	11.7	94.0	105.8	− .76	.0
18	12.01	1.35	12.68	14.03	11.2	105.6	116.8	− 2.02	.0
19	13.45	1.50	12.30	13.80	11.2	91.4	102.6	− .35	.0
20	12.38	2.69	12.12	14.81	21.7	97.9	119.6	− 2.43	.0
Total	169.37	15.991	155.16	171.14	9.4	91.6	101.0	− 1.77	2.5
Average	12.10	1.14	11.08	12.22	....	....	....	− .12	....
Entire preservative period:									
Total	724.43	60.111	638.16	698.25	8.3	88.1	96.4	+26.18	20.5
Average	14.49	1.20	12.76	13.97	....	....	....	+ .52	....
After period.									
1903—June 21	11.67	1.11	12.27	13.38	9.5	105.1	114.7	− 1.71	....
22	14.35	1.34	12.00	13.34	9.3	83.6	93.0	+ 1.01	....
23	13.91	1.41	12.00	13.41	10.1	86.3	96.4	+ .50	....
24	17.03	2.10	13.73	15.83	12.3	80.6	93.0	+ 1.20	....
25	18.09	1.76	14.13	15.89	9.7	78.1	87.8	+ 2.20	....
26	16.18	1.17	13.89	15.06	7.2	85.8	93.1	+ 1.12	....
27	17.49	1.55	16.82	18.37	8.9	96.2	105.0	− .88	....
28	18.64	1.01	15.05	16.06	5.4	80.7	86.2	+ 2.58	....
29	19.29	.878	14.70	15.58	4.6	76.2	80.8	+ 3.71	....
Total	146.65	12.328	124.59	136.92	8.4	85.0	93.4	+ 9.73	....
Average	16.29	1.37	13.84	15.21	....	....	....	+ 1.08	....

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	(12.46)	Lost.	(11.48)			(92.1)			
25	12.91	0.811	11.14	11.95	6.3	86.3	92.6	+ 0.96	
26	13.37	1.80	15.14	16.94	13.5	113.2	126.7	− 3.57	
27	14.14	.605	13.59	14.20	4.3	96.1	100.4	− .06	
28	15.37	2.36	15.97	18.33	15.4	103.9	119.2	− 2.96	
29	13.51	1.42	13.35	14.77	10.5	98.8	109.3	− 1.26	
30	13.99	1.11	12.88	13.99	7.9	92.1	100.0	± .00	
May 1	14.32	2.14	11.76	13.90	14.9	82.1	97.1	+ .42	
Total	97.61	10.246		104.08	10.5		106.6	− 6.47	
	(110.07)		(105.31)			(95.7)			
Average	13.94	1.47		14.87				− .93	
	(13.76)		(13.16)						
Preservative period.									
First subperiod:									
1903—May 2	14.82	1.25	13.53	14.78	8.4	91.3	99.7	+ 0.04	0.5
3	14.51	1.57	11.55	13.12	10.8	79.6	90.4	+ 1.39	.5
4	[15.93]	[1.45]	Lost.		[9.1]				.5
5	13.11	1.13	12.72	13.85	8.6	97.0	105.6	− .74	.5
6	14.03	.947	12.30	13.25	6.7	87.7	94.4	+ .78	.5
7	16.45	1.64	13.03	14.67	10.0	79.2	89.2	+ 1.78	.5
8	14.77	1.28	11.73	13.01	8.7	79.4	88.1	+ 1.76	.5
9	17.58	1.42	12.64	14.06	8.1	71.9	80.0	+ 3.52	.5
10	19.01	1.34	13.16	14.50	7.0	69.2	76.3	+ 4.51	.5
11	16.94	1.10	12.82	13.92	6.5	75.7	82.2	+ 3.02	.5
12	18.64	2.20	12.42	14.62	11.8	66.6	78.3	+ 4.02	.5
13	15.20	1.45	11.59	13.04	9.5	76.2	85.8	+ 2.16	.5
Total	175.06		137.49	152.82		78.5	87.3	+22.24	6.0
	[190.99]	[16.777]			[8.8]				
Average	15.91		12.50	13.89				+ 2.02	
	[15.92]	[1.40]							
Second subperiod:									
1903—May 14	16.33	1.70	12.77	14.47	10.4	78.2	88.6	+ 1.86	0.5
15	14.97	1.31	13.10	14.41	8.8	87.5	96.2	+ .56	.5
16	15.98	1.38	13.69	15.07	8.6	85.7	94.3	+ .91	.5
17	16.37	1.99	15.72	17.71	12.2	96.0	108.2	− 1.34	.5
18	15.53	1.05	12.75	13.80	6.8	82.1	88.9	+ 1.73	.5
19	14.35	1.47	11.50	12.97	10.2	80.1	90.4	+ 1.38	.5
20	17.68	.962	13.86	14.82	5.4	78.4	83.8	+ 2.86	.5
21	16.97	1.44	15.76	17.20	8.5	92.9	101.4	− .23	.5
22	15.65	2.08	13.10	15.18	13.3	83.7	97.0	+ .47	.5
23	17.21	1.41	12.34	13.75	8.2	71.7	79.9	+ 3.46	.5
24	15.35	1.67	12.60	14.27	10.9	82.1	93.0	+ 1.08	.5
25	17.32	1.56	13.63	15.19	9.0	78.7	87.7	+ 2.13	.5
Total	193.71	18.022	160.82	178.84	9.3	83.0	92.3	+14.87	6.0
Average	16.14	1.50	13.40	14.90				+ 1.24	
Subperiods 1 and 2:									
Total	368.77		298.31	331.66		80.9	89.9	+37.11	12.0
	[384.70]	[34.799]			[9.0]				
Average	16.03		12.97	14.42				+ 1.61	
	[16.03]	[1.45]							
Third subperiod:									
1903—May 26	17.47	1.93	13.65	15.58	11.0	78.1	89.2	+ 1.89	0.5
27	15.14	1.41	13.38	14.79	9.3	88.4	97.7	+ .35	.5
28	15.63	2.44	14.44	16.88	15.6	92.4	108.0	− 1.25	.5
29	16.67	1.37	9.94	11.31	8.2	59.6	67.8	+ 5.36	.5
30	18.55	2.24	17.55	19.79	12.1	94.6	106.7	− 1.24	.5
31	(14.81)	Lost.	(15.03)			(101.5)			.5
June 1	16.57	2.23	14.99	17.22	13.5	90.5	103.9	− .65	.5
2	15.53	.772	13.62	14.39	5.0	87.7	92.7	+ 1.14	.5
3	16.63	1.30	13.68	14.98	7.8	82.3	90.1	+ 1.65	.5
4	17.54	1.47	13.59	15.06	8.4	77.5	85.9	+ 2.48	.5
5	16.98	1.36	11.15	12.51	8.0	65.7	73.7	+ 4.47	.5
6	15.78	1.43	13.54	14.97	9.1	85.8	94.9	+ .81	.5
Total	182.49	17.952		167.48	9.8		91.8	+15.01	6.0
	(197.30)		(164.56)			(83.4)			
Average	16.59	1.63		15.23				+ 1.36	
	(16.44)		(13.71)						

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 3—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	551.26			499.14			90.5	+52.12	18.0
	(566.07)		(462.87)			(81.8)			
	[567.19]	[52.751]			[9.3]				
Average	16.21			14.68				+ 1.53	
	(16.17)		(13.22)						
	[16.21]	[1.51]							
Fourth subperiod:									
1903—June 7	15.58	0.678	14.13	14.81	4.4	90.7	95.1	+ 0.77	0.5
8	15.03	1.93	13.03	14.96	12.8	86.7	99.5	+ .07	.5
9	15.84	1.36	12.22	13.58	8.6	77.1	85.7	+ 2.26	.5
10	15.93	1.39	11.37	12.76	8.7	71.4	80.1	+ 3.17	.5
11	16.69	1.73	13.44	15.17	10.4	80.5	90.9	+ 1.52	.5
12	15.02	.796	13.39	14.19	5.3	89.1	94.5	+ .83	.5
13	15.83	1.70	14.14	15.84	10.7	89.3	100.0	− .01	.5
14	14.23	1.50	14.58	16.08	10.5	102.4	113.0	− 1.85	.5
15	16.65	1.03	13.98	15.01	6.2	84.0	90.2	+ 1.64	.5
16	14.85	1.94	13.95	15.89	13.1	93.9	107.0	− 1.04	.5
17	18.02	1.68	13.84	15.52	9.3	76.8	86.1	+ 2.50	.5
18	16.93	2.41	13.10	15.51	14.2	77.4	91.6	+ 1.42	.5
19	16.39	.557	13.36	13.92	3.4	81.5	84.9	+ 2.47	.5
20	16.22	2.51	13.16	15.67	15.5	81.1	96.6	+ .55	.5
Total	223.21	21.211	187.69	208.91	9.5	81.1	93.6	+14.30	7.0
Average	15.94	1.52	13.41	14.92				+ 1.02	
Entire preservative period:									
Total	774.47			708.05			91.4	+66.42	25.0
	(789.28)		(650.56)			82.4			
	[790.40]	[73.962]			9.4				
Average	16.13			14.75				+ 1.38	
	(16.11)		(13.28)						
	[16.13]	[1.51]							
After period.									
1903—June 21	15.87	1.52	14.34	15.86	9.6	90.4	99.9	+ 0.01	
22	15.71	1.66	10.98	12.64	10.5	69.9	80.5	+ 3.07	
23	19.61	1.12	14.82	15.94	5.7	75.6	81.3	+ 3.67	
24	16.29	2.67	14.66	17.33	16.4	90.0	106.3	− 1.04	
25	18.93	2.43	13.86	16.29	12.8	73.2	86.1	+ 2.64	
26	19.12	1.97	14.80	16.77	10.3	77.4	87.7	+ 2.35	
27	17.85	1.59	14.34	15.93	8.9	80.3	89.2	+ 1.92	
28	21.89	2.25	14.46	16.71	10.3	66.1	76.3	+ 5.18	
29	17.16	1.13	14.57	15.70	6.6	84.9	91.5	+ 1.46	
Total	162.43	16.34	126.83	143.17	10.1	78.1	88.2	+19.26	
Average	18.05	1.82	14.09	15.91				+ 2.14	

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	16.49	1.08	12.07	13.15	6.5	73.2	79.7	+ 3.34	....
25	13.47	(a)	13.78	13.78	....	102.3	102.3	− .31	....
26	13.69	1.78	12.88	14.66	13.0	94.1	107.1	− .97	....
27	14.96	1.60	15.47	17.07	10.7	103.4	114.1	− 2.11	....
28	14.62	1.40	15.47	16.87	9.6	105.8	115.4	− 2.25	....
29	9.67	1.07	13.16	14.23	11.1	136.1	147.2	− 4.56	....
30	14.94	1.68	13.61	15.29	11.2	91.1	102.3	− .35	....
May 1	12.83	2.72	15.82	18.54	21.2	123.3	144.5	+ 5.71	....
Total	110.67	11.33	112.26	123.59	10.2	101.4	111.7	−12.92	....
Average	13.83	1.42	14.03	15.45	....	....	....	− 1.62	....
Preservative period.									
First subperiod:									
1903—May 2	15.66	(a)	12.59	12.59	....	80.4	80.4	+ 3.07	0.5
3	15.66	2.11	12.34	14.45	13.5	78.8	92.3	+ 1.21	.5
4	17.60	1.05	14.38	15.43	6.0	81.7	87.7	+ 2.17	.5
5	15.91	2.00	12.10	14.10	12.6	76.1	88.6	+ 1.81	.5
6	15.91	1.04	15.01	16.05	6.5	94.3	100.9	− .14	.5
7	15.48	1.51	12.38	13.89	9.8	80.0	89.7	+ 1.59	.5
8	11.88	1.62	13.07	14.69	13.6	110.0	123.6	− 2.81	.5
9	14.29	2.08	12.52	14.60	14.6	87.6	102.2	− .31	.5
10	15.19	.724	12.80	13.52	4.8	84.3	89.0	+ 1.67	.5
11	14.88	1.60	12.87	14.47	10.8	86.5	97.2	+ .41	.5
12	15.88	1.82	13.74	15.56	11.5	86.5	98.0	+ .32	.5
13	12.59	1.39	12.81	14.20	11.0	101.7	112.8	− 1.61	.5
Total	180.93	16.94	156.61	173.55	9.4	86.6	95.9	+ 7.38	6.0
Average	15.08	1.41	13.05	14.46	....	....	....	+ .62	....
Second subperiod:									
1903—May 14	16.67	1.88	15.81	17.69	11.3	94.8	106.1	− 1.02	0.5
15	15.01	.741	12.10	12.84	4.9	80.6	85.5	+ 2.17	.5
16	17.06	2.03	15.44	17.47	11.9	90.5	102.4	− .41	.5
17	16.07	1.46	14.32	15.78	9.1	89.1	98.2	+ .29	.5
18	16.89	1.50	16.12	17.62	8.9	95.4	104.3	− .73	.5
19	15.31	3.66	14.96	18.62	23.9	97.7	121.6	− 3.31	.5
20	19.27	(a)	13.06	13.06	....	67.8	67.8	+ 6.21	.5
21	17.18	.465	14.56	15.02	2.7	84.7	87.4	+ 2.16	.5
22	16.69	2.62	14.70	17.32	15.7	88.1	103.8	− .63	.5
23	16.05	2.39	15.25	17.64	14.9	95.0	109.9	− 1.59	.5
24	16.04	1.55	14.40	15.95	9.7	89.8	99.4	+ .09	.5
25	15.55	1.24	14.68	15.92	8.0	94.4	102.4	− .37	.5
Total	197.79	19.536	175.40	194.93	9.9	88.7	98.6	+ 2.86	6.0
Average	16.48	1.63	14.62	16.24	....	....	....	+ .24	....
Subperiods 1 and 2:									
Total	378.72	36.476	332.01	368.48	9.6	87.7	97.3	+10.24	12.0
Average	15.78	1.52	13.82	15.35	....	....	....	+ .43	....

a No movement.

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	18.38	1.52	14.70	16.22	8.3	80.0	88.2	+ 2.16	....
25	18.64	.515	16.88	17.40	2.8	90.6	93.3	+ 1.24	....
26	17.08	2.05	16.36	18.41	12.0	95.8	107.8	1.33	....
27	16.46	2.28	16.55	18.83	13.9	100.5	114.4	— 2.37	....
28	17.87	(a)	16.14	16.14	....	90.3	90.3	+ 1.73	....
29	17.72	.993	16.86	17.85	5.6	95.1	100.7	— .13	....
30	18.13	1.45	17.51	18.96	8.0	96.6	104.6	.83	....
May 1	17.10	1.79	17.00	18.79	10.5	99.4	109.9	— 1.69	....
Total	141.38	10.60	132.00	142.60	7.5	93.4	100.9	— 1.22	....
Average	17.67	1.32	16.50	17.83	....	....	....	— .16	....
Preservative period.									
First subperiod:									
1903—May 2	18.25	0.773	17.01	17.78	4.2	93.2	97.4	+ 0.47	0.5
3	18.20	.691	17.22	17.91	3.8	94.6	98.4	+ .29	.5
4	20.57	2.12	16.73	18.85	10.3	81.3	91.6	+ 1.72	.5
5	21.36	1.16	16.63	17.79	5.4	77.9	83.3	+ 3.57	.5
6	18.75	.580	16.65	17.23	3.1	88.8	91.9	+ 1.52	.5
7	20.41	1.49	16.68	18.17	7.3	81.7	89.0	+ 2.24	.5
8	17.50	1.65	16.72	18.37	9.4	95.5	105.0	— .87	.5
9	19.05	2.22	15.33	17.55	11.7	80.5	92.0	+ 1.50	.5
10	19.87	1.97	15.14	17.11	9.9	76.2	86.1	+ 2.76	.5
11	21.89	.981	16.17	17.15	4.5	73.9	78.3	+ 4.74	.5
12	20.59	1.52	14.74	16.26	7.4	71.6	79.0	+ 4.33	.5
13	17.18	2.79	16.32	19.11	16.2	95.0	111.2	— 1.93	.5
Total	233.62	17.95	195.34	213.28	7.7	83.6	91.3	+20.34	6.0
Average	19.47	1.50	16.28	17.77	....	....	....	+ 1.70	....
Second subperiod:									
1903—May 14	19.90	(a)	15.22	15.22	....	76.5	76.5	+ 4.68	0.5
15	17.71	1.92	14.74	16.66	10.8	83.2	94.1	+ 1.05	.5
16	18.07	2.56	16.56	19.12	14.2	91.6	105.8	— 1.05	.5
17	19.83	(a)	17.34	17.34	....	87.4	87.4	+ 2.49	.5
18	15.53	.686	16.74	17.43	4.4	107.8	112.2	1.90	.5
19	17.34	(a)	15.26	15.26	....	88.0	88.0	+ 2.08	.5
20	23.01	2.54	15.84	18.38	11.0	68.8	79.9	+ 4.63	.5
21	19.67	(a)	16.76	16.76	....	85.2	85.2	+ 2.91	.5
22	17.17	2.45	13.89	16.34	14.3	80.9	95.2	+ .83	.5
23	18.60	3.03	15.44	18.47	16.3	83.0	99.3	+ .13	.5
24	17.50	1.32	16.80	18.12	7.5	96.0	103.5	— .62	.5
25	(18.91)	Lost.	(14.43)	....	....	(76.3)	....	....	.5
Total	204.33	11.51	....	189.10	7.1	....	92.5	+15.23	6.0
	(223.21)	....	(189.02)	....	....	(84.7)	....	....	
Average	18.58	1.32	....	17.19	....	....	....	+ 1.39	....
	(18.60)	....	(15.75)	....	....	....	....	....	....
Subperiods 1 and 2:									
Total	437.95	32.45	....	402.38	7.4	....	91.9	+35.57	12.0
	(456.86)	....	(384.36)	....	....	(84.1)	....	....	
Average	19.01	1.41	....	17.49	....	....	....	+ 1.55	....
	(19.04)	....	(16.02)	....	....	....	....	....	....
Third subperiod:									
1903—May 26	17.50	0.233	16.60	16.83	1.3	94.9	96.2	+ 0.67	0.5
27	10.92	(a)	14.70	14.70	....	134.6	134.6	— 3.78	.0
28	16.00	(a)	15.51	15.51	....	96.9	96.9	+ .49	.5
29	17.03	2.17	13.97	16.14	14.5	82.0	96.5	+ .59	.5
30	20.59	1.04	17.46	18.50	5.1	84.8	89.9	+ 2.09	.5
31	15.51	2.20	16.77	18.97	14.2	108.1	122.3	— 3.46	.5
June 1	17.05	.210	14.95	15.16	1.2	87.7	88.9	+ 1.89	.5
2	17.35	1.56	16.34	17.90	9.0	94.2	103.2	— .55	.5
3	17.61	2.04	16.93	18.97	11.6	96.1	107.7	— 1.36	.5
4	19.01	.917	16.95	17.87	4.8	89.2	94.0	+ 1.14	.5
5	16.98	(a)	15.82	15.82	....	93.2	93.2	+ 1.16	.5
6	17.97	2.95	18.93	21.88	16.4	105.3	121.8	— 3.91	.5
Total	203.52	13.62	191.93	208.55	6.7	95.8	102.5	— 5.03	5.5
Average	16.96	1.14	16.24	17.38	....	....	....	.42	....

a No movement.

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 5—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	641.47	46.07	....	610.93	7.2	....	95.2	+30.54	17.5
	(660.38)	....	(579.29)	....	....	(87.7)	....	....	
Average	18.33	1.32	....	17.46	....	....	....	+ .87	....
	(18.34)	....	(16.09)	....	....	....	....	....	....
Fourth subperiod:									
1903—June 7	17.13	(*a*)	13.03	13.03	....	76.1	76.1	+ 4.10	0.5
8	17.69	(*a*)	13.60	13.60	....	76.9	76.9	+ 4.09	.5
9	18.31	2.48	16.28	18.76	13.5	88.9	102.5	− .45	.5
10	19.50	(*a*)	17.07	17.07	....	87.5	87.5	+ 2.43	.5
11	18.92	2.25	16.59	18.84	11.9	87.7	99.6	+ .08	.5
12	18.10	1.00	16.93	17.93	5.5	93.5	99.1	+ .17	.5
13	17.73	3.15	17.35	20.50	17.8	97.9	115.6	− 2.77	.5
14	15.04	(*a*)	14.21	14.21	....	94.5	94.5	+ .83	.5
15	17.98	1.47	16.81	18.28	8.2	93.5	101.7	− .30	.5
16	16.66	.935	16.26	17.20	5.6	97.6	103.2	− .54	.5
17	18.78	2.55	16.29	18.84	13.6	86.7	100.3	− .06	.5
18	18.38	2.21	16.44	18.65	12.0	89.4	101.5	− .27	.5
19	18.89	(*a*)	15.45	15.45	....	81.8	81.8	+ 3.44	.5
20	16.76	4.37	16.24	20.61	26.1	96.9	123.0	− 3.85	.5
Total	249.87	20.42	222.55	242.97	8.2	89.1	97.2	+ 6.90	7.0
Average	17.85	1.46	15.90	17.36	....	....	....	+ .49	....
Entire preservative period:									
Total	891.34	66.49	....	853.90	7.5	....	95.8	+37.44	24.5
	(910.25)	....	(801.84)	....	....	(88.1)	....	....	
Average	18.19	1.36	....	17.43	....	....	....	+ .76	....
	(18.21)	....	(16.04)	....	....	....	....	....	....
After period.									
1903—June 21	18.34	(*a*)	15.74	15.74	....	85.8	85.8	+ 2.60	....
22	18.84	1.71	13.91	15.62	9.1	73.8	82.9	+ 3.22	....
23	15.72	.752	15.74	16.49	4.8	100.1	104.9	− .77	....
24	18.79	1.86	15.40	17.26	9.9	82.0	91.9	+ 1.53	....
25	19.75	2.78	17.00	19.78	14.1	86.1	100.2	− .03	....
26	17.57	1.94	14.36	16.30	11.0	81.7	92.8	+ 1.27	....
27	18.11	1.43	14.90	16.33	7.9	82.3	90.2	+ 1.78	....
28	17.98	2.32	15.57	17.89	12.9	86.6	99.5	+ .09	....
29	17.19	.787	15.91	16.70	4.6	92.6	97.1	+ .49	....
Total	162.29	13.58	138.53	152.11	8.4	85.4	93.7	+10.18	....
Average	18.03	1.51	15.39	16.90	....	....	....	+ 1.13	....

a No movement

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	(13.89)	Lost.	(8.21)	....	....	(59.1)	....	....	....
25	12.42	1.47	10.77	12.24	11.8	86.7	98.6	+ 0.18	....
26	13.48	1.52	11.63	13.15	11.3	86.3	97.5	+ .33	....
27	13.54	1.21	11.35	12.56	8.9	83.8	92.7	+ .98	....
28	13.55	1.80	11.84	13.64	13.3	87.4	100.7	− .09	....
29	13.55	1.42	12.29	13.71	10.5	90.7	101.2	− .16	....
30	12.98	2.22	12.38	14.60	17.1	95.4	112.5	− 1.62	....
May 1	12.03	(*a*)	11.61	11.61	....	96.5	96.5	+ .42	....
Total	91.55	9.64	....	91.51	10.5	....	100.0	+ .04	....
	(105.44)	....	(90.08)	....	....	(85.4)	....	....	....
Average	13.08	1.38	....	13.07	....	....	....	+ .01	....
	(13.18)	....	(11.26)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—May 2	12.89	1.81	12.13	13.94	14.0	94.1	108.1	− 1.05	0.5
3	15.37	1.99	12.46	14.45	12.9	81.1	94.0	+ .92	.5
4	13.77	1.42	11.36	12.78	10.3	82.5	92.8	+ .99	.5
5	14.13	1.00	10.53	11.53	7.1	74.5	81.6	+ 2.60	.5
6	14.97	1.57	11.35	12.92	10.5	75.8	86.3	+ 2.05	.5
7	14.54	2.69	11.30	13.99	18.5	77.7	96.2	+ .55	.5
8	13.62	(*a*)	11.03	11.03	....	81.0	81.0	+ 2.59	.0
9	13.91	2.86	12.54	15.40	20.6	90.1	110.7	− 1.49	.0
10	15.31	2.05	11.69	13.74	13.4	76.4	89.7	+ 1.57	.5
11	14.99	.522	11.95	12.47	3.5	79.7	83.2	+ 2.52	.5
12	14.22	1.04	11.42	12.46	7.3	80.3	87.6	+ 1.76	.5
13	13.17	1.59	12.14	13.73	12.1	92.2	104.2	− .56	.5
Total	170.89	18.542	139.90	158.44	10.9	81.9	92.7	+12.45	5.0
Average	14.24	1.55	11.66	13.20	....	....	....	+ 1.04	....
Second subperiod:									
1903—May 14	14.06	1.35	10.98	12.33	9.6	78.1	87.7	+ 1.73	0.5
15	13.37	2.34	10.85	13.19	17.5	81.1	98.6	+ .18	.5
16	13.46	1.29	12.15	13.44	9.6	90.3	99.9	+ .02	.5
17	14.43	.528	13.74	14.27	3.7	95.2	98.9	+ .16	.5
18	14.04	1.68	11.52	13.20	12.0	82.1	91.0	− .84	.5
19	14.41	2.12	12.01	14.13	14.7	83.3	98.1	+ .28	.5
20	16.38	1.77	11.55	13.32	10.8	70.5	81.3	+ 3.06	.5
21	14.82	1.93	12.69	14.62	13.0	85.6	98.6	+ .20	.5
22	16.20	1.39	13.17	14.56	8.6	81.3	89.9	+ 1.64	.5
23	14.11	1.53	13.08	14.61	10.8	92.7	103.5	.50	.5
24	14.58	2.09	12.50	14.59	14.3	85.7	100.1	− .01	.5
25	14.21	1.20	12.19	13.39	8.4	85.8	94.2	+ .82	.5
Total	171.07	19.218	146.43	165.65	11.0	84.1	95.2	+ 8.42	6.0
Average	14.51	1.60	12.20	13.80	....	....	....	+ .71	....
Subperiods 1 and 2:									
Total	341.96	37.76	286.33	324.09	10.9	83.0	91.0	+20.87	11.0
Average	14.37	1.57	11.93	13.50	....	....	....	+ .87	....
Third subperiod:									
1903—May 26	13.01	1.02	12.64	13.66	7.8	97.2	105.0	− .65	0.5
27	13.21	(*a*)	11.97	11.97	....	90.4	90.1	+ 1.27	.5
28	14.68	3.20	13.09	16.29	21.8	89.2	111.0	− 1.61	.5
29	15.57	3.07	11.53	14.60	19.7	71.1	93.8	+ .97	.5
30	14.39	.612	14.98	15.592	4.5	103.9	108.4	− 1.202	.5
31	12.53	1.30	10.73	12.03	10.4	85.6	96.0	+ .50	.5
June 1	12.42	2.07	12.81	14.88	16.6	103.1	119.8	− 2.46	.5
2	14.54	2.16	13.45	15.61	14.9	92.5	107.4	− 1.07	.5
3	16.02	1.70	11.68	13.38	10.6	72.9	83.5	+ 2.64	.5
4	16.16	1.03	13.04	14.07	6.4	80.7	87.1	+ 2.09	.5
5	15.46	1.72	12.56	14.28	11.1	81.2	92.4	+ 1.18	.5
6	13.68	.933	12.38	13.313	6.8	90.5	97.3	+ .367	.5
Total	171.70	18.815	150.83	169.675	11.0	87.8	98.8	+ 2.025	6.0
Average	14.31	1.57	12.57	14.14	....	....	....	+ .17	....

a No movement.

TABLE LIII.—*Nitrogen balances for Series V*—Continued.

No. 6—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (1÷4)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	516.66	56.605	437.16	493.765	11.0	84.6	95.6	+22.895	17.0
Average	14.35	1.57	12.14	13.72	....	....	....	+ .63	....
Fourth subperiod:									
1903—June 7	14.54	2.00	12.38	14.38	13.8	85.1	98.9	+ 0.16	0.5
8	13.46	1.96	11.09	13.05	14.6	82.4	97.0	+ .41	.5
9	14.86	1.96	12.71	14.67	13.2	85.5	98.7	+ .19	.5
10	14.64	.714	13.15	13.86	4.9	89.8	94.7	+ .78	.5
11	15.14	1.26	11.38	12.64	8.3	75.2	83.5	+ 2.50	.5
12	13.03	1.82	13.16	14.98	14.0	101.0	115.0	− 1.95	.0
13	12.63	1.14	12.51	13.65	9.0	99.0	108.1	− 1.02	.0
14	13.04	2.16	12.63	14.79	16.6	96.8	113.4	− 1.75	.0
15	15.09	1.46	12.96	14.42	9.7	85.9	95.6	+ .67	.0
16	14.09	1.48	12.48	13.96	10.5	88.6	99.1	+ .13	.0
17	13.91	(a)	11.18	11.18	....	80.4	80.4	+ 2.73	.0
18	14.12	3.63	12.76	16.39	25.7	90.4	116.1	− 2.27	.0
19	(11.23)	Lost.	(9.54)	....	....	(84.9)	....	....	.0
20	(13.30)	Lost.	(13.00)	....	....	(97.7)	....	....	.0
Total	168.55 (193.08)	19.584	.... (170.93)	167.97	11.6	.... (88.5)	99.7	+ .58	2.5
Average	14.05 (13.79)	1.63	.... (12.21)	14.00	....	....	....	+ .05	....
Entire preservative period:									
Total	685.21 (709.74)	76.189	.... (608.09)	661.735	11.1	.... (85.7)	96.6	+23.475	19.5
Average	14.28 (14.19)	1.59	.... (12.16)	13.79	....	....	....	+ .49	....
After period.									
1903—June 21	14.44	1.53	13.00	14.53	10.6	90.0	100.6	− .09	....
22	14.65	2.97	12.81	15.78	20.3	87.4	107.7	− 1.13	....
23	14.08	1.88	12.97	14.85	13.4	92.1	105.5	− .77	....
24	14.35	2.91	11.77	14.68	20.3	82.0	102.3	− .33	....
25	15.40	(a)	13.61	13.61	....	88.4	88.4	+ 1.79	....
26	14.01	1.85	10.56	12.41	13.2	75.4	88.6	+ 1.60	....
27	14.23	3.87	12.32	16.19	27.2	86.6	113.8	− 1.96	....
28	17.62	1.35	12.11	13.46	7.7	68.7	76.4	+ 4.16	....
29	14.81	(a)	10.62	10.62	....	71.7	71.7	+ 4.19	....
Total	133.59	16.36	109.77	126.13	12.2	82.2	94.4	+ 7.46	....
Average	14.84	1.82	12.20	14.01	....	....	....	+ .83	....

a No movement.

TABLE LIV.—*Summary of nitrogen balances for Series V.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams*
No. 1	122.04	8.69	118.77	127.46	7.1	97.3	104.4	− 5.42	
No. 3	97.61	10.25		104.08	10.5		106.6	− 6.47	
	(110.07)		(105.31)			(95.7)			
No. 5	141.38	10.60	132.00	142.60	7.5	93.4	100.9	− 1.22	
Total	361.03	29.54		374.14	8.2		103.6	− 13.11	
	(373.4[illegible])		(356.08)			(95.3)			
Average	16.41	1.34		17.00				− .60	
	(16.24)		(15.48)						
Preservative period.									
First subperiod:									
No. 1	222.18	18.12	202.32	220.44	8.2	91.1	99.2	+ 1.74	6.0
No. 3	175.06		137.49	152.82		78.5	87.3	+ 22.24	6.0
	[190.99]	[16.78]			[8.8]				
No. 5	233.62	17.94	195.34	213.28	7.7	83.6	91.3	+ 20.34	6.0
Total	630.86		535.15	586.54		84.8	93.0	+ 44.32	18.0
	[646.79]	[52.84]			[8.2]				
Average	18.02		15.29	16.76				+ 1.26	
	[17.97]	[1.47]							
Second subperiod:									
No. 1	221.67	15.73	203.53	219.26	7.1	91.8	98.9	+ 2.41	6.0
No. 3	193.71	18.02	160.82	178.84	9.3	83.0	92.3	+ 14.87	6.0
No. 5	204.33	14.51		189.10	7.1		92.5	+ 15.23	6.0
	(223.24)		(189.02)			(84.7)			
Total	619.71	48.26		587.20	7.8		94.8	+ 32.51	18.0
	(638.62)		(553.37)			(86.7)			
Average	17.71	1.38		16.78				+ .93	
	(17.74)		(15.37)						
Subperiods 1 and 2:									
Total	1,250.57			1,173.74			93.9	+ 76.83	36.0
	(1,269.48)		(1,088.52)			(85.7)			
	[1,266.50]	[101.10]			[8.0]				
Average	17.87			16.76				+ 1.10	
	(17.88)		(15.33)						
	[17.84]	[1.42]							
Third subperiod:									
No. 1	211.13	15.47		209.81	7.3		99.4	+ 1.32	6.0
	(229.59)		(210.55)			(91.7)			
No. 3	182.49	17.95		167.48	9.8		91.8	+ 15.01	6.0
	(197.30)		(161.56)			(83.4)			
No. 5	203.52	13.62	194.93	208.55	6.7	95.8	102.5	− 5.03	5.5
Total	597.14	47.04		585.84	7.9		98.1	+ 11.30	17.5
	(630.41)		(570.04)			(90.4)			
Average	17.56	1.38		17.23				+ .33	
	(17.51)		(15.83)						
Subperiods 1, 2, and 3:									
Total	1,847.71			1,759.58			95.2	+ 88.13	53.5
	(1,899.89)		(1,658.56)			(87.3)			
	[1,863.64]	[148.14]			[7.9]				
Average	17.77			16.92				+ .85	
	(17.76)		(15.50)						
	[17.75]	[1.41]							
Fourth subperiod:									
No. 1	260.95	23.05	237.51	260.55	8.8	91.0	99.8	+ 0.40	7.0
No. 3	223.21	21.21	187.69	208.91	9.5	84.1	93.6	+ 14.30	7.0
No. 5	249.87	20.42	222.55	212.97	8.2	89.1	97.2	+ 6.90	7.0
Total	734.03	64.68	647.75	712.43	8.8	88.2	97.1	+ 21.60	21.0
Average	17.48	1.54	15.42	16.96				+ .52	

TABLE LIV.—*Summary of nitrogen balances for Series V*—Continued.

Three Men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine, (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period—Continued.									
Entire preservative period:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	2,581.74			2,472.01			95.7	+109.73	74.5
	(2,633.92)		(2,306.31)			(87.6)			
	[2,597.67]	[212.82]			[8.2]				
Average	17.68			16.93				+ .75	
	(17.68)		(15.48)						
	[17.67]	[1.45]							
After period.									
No. 1	148.66	14.87		150.16	10.0		101.0	− 1.50	
	(166.10)		(152.31)			(91.7)			
No. 3	162.43	16.34	126.83	143.17	10.1	78.1	88.2	+ 19.26	
No. 5	162.29	13.58	138.53	152.11	8.4	85.4	93.7	+ 10.18	
Total	473.38	44.79		445.44	9.5		94.1	+ 27.94	
	(490.82)		(417.67)			(85.1)			
Average	18.21	1.72		17.13				+ 1.08	
	(18.18)		(15.47)						

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine, (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.									
No. 1	122.04	8.69	188.77	127.46	7.1	97.3	104.4	− 5.42	
No. 2	117.90	7.24		109.93	6.1		93.2	+ 7.97	
	(133.89)		(117.73)			(87.9)			
No. 3	97.61	10.25		104.08	10.5		106.6	− 6.47	
	(110.07)		(105.31)			(95.7)			
No. 5	141.38	10.60	132.00	142.60	7.5	93.4	100.9	− 1.22	
No. 6	91.55	9.64		91.51	10.5		100.0	+ .04	
	(105.44)		(90.08)			(85.4)			
Total	570.48	46.42		575.58	8.1		100.9	− 5.10	
	(612.82)		(563.89)			(92.0)			
Average	15.85	1.29		15.99				− .14	
	(15.71)		(14.46)						
Preservative period.									
First subperiod:									
No. 1	222.18	18.12	202.32	220.44	8.2	91.1	99.2	+ 1.74	6.0
No. 2	205.60	15.36	171.64	187.00	7.5	83.5	91.0	+ 18.60	6.0
No. 3	175.06		137.49	152.82		78.5	87.3	+ 22.24	6.0
	[190.99]	[16.78]			[8.8]				
No. 5	233.62	17.94	195.34	213.28	7.7	83.6	91.3	+ 20.34	6.0
No. 6	170.89	18.54	139.90	158.44	10.9	81.9	92.7	+ 12.45	5.0
Total	1,007.35		846.69	931.98		84.1	92.5	+ 75.37	29.0
	[1,023.28]	[86.74]			[8.5]				
Average	17.07		14.35	15.80				+ 1.27	
	[17.05]	[1.45]							
Second subperiod:									
No. 1	221.67	15.73	203.53	219.26	7.1	91.8	98.9	+ 2.41	6.0
No. 2	192.37	15.09	161.95	177.04	7.8	84.2	92.0	+ 15.33	6.0
No. 3	193.71	18.02	160.82	178.84	9.3	83.0	92.3	+ 14.87	6.0
No. 5	204.33	14.51		189.10	7.1		92.5	+ 15.23	6.0
	(223.24)		(189.02)			(84.7)			
No. 6	174.07	19.22	146.43	165.65	11.0	84.1	95.2	+ 8.42	6.0
Total	986.15	82.57		929.89	8.4		94.3	+ 56.26	30.0
	(1,005.06)		(861.75)			(85.7)			
Average	16.71	1.40		15.76				+ .95	
	(16.75)		(14.36)						
Subperiods 1 and 2:									
Total	1,993.50			1,861.87			93.4	+131.63	59.0
	(2,012.41)		(1,708.44)			(84.9)			
	[2,009.43]	[169.31]			[8.4]				
Average	16.89			15.78				+ 1.11	
	(16.91)		(14.36)						
	[16.89]	[1.42]							

TABLE LIV.—*Summary of nitrogen balances for Series V*—Continued.

Five men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period—Continued.									
Third subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	211.13	15.47		209.81	7.3		99.4	+ 1.32	6.0
	(229.59)		(210.55)			(91.7)			
No. 2	157.09	13.67	149.41	163.07	8.7	95.1	103.8	− 5.98	6.0
No. 3	182.49	17.95		167.48	9.8		91.8	+ 15.01	6.0
	(197.30)		(164.56)			(83.4)			
No. 5	203.52	13.62	194.93	208.55	6.7	95.8	102.5	− 5.03	5.5
No. 6	171.70	18.84	150.83	169.68	11.0	87.8	98.8	+ 2.02	6.0
Total	925.93	79.55		918.59	8.6		99.2	+ 7.34	29.5
	(959.20)		(870.28)			(90.7)			
Average	15.96	1.37		15.84				+ .12	
	(15.99)		(14.50)						
Subperiods 1, 2, and 3: Total	2,919.43			2,780.46			95.2	+138.97	88.5
	(2,971.61)		(2,578.72)			(86.8)			
	[2,935.36]	[248.86]			[8.5]				
Average	16.59			15.80				+ .79	
	(16.60)		(14.41)						
	[16.58]	[1.41]							

Six men.

Period.	1	2	3	4	5	6	7	8	9
Fore period.									
No. 1	122.04	8.69	118.77	127.46	7.1	97.3	104.4	− 5.42	
No. 2	117.90	7.24		109.93	6.1		93.2	+ 7.97	
	(133.89)		(117.73)			(87.9)			
No. 3	97.61	10.25		104.08	10.5		106.6	− 6.47	
	(110.07)		(105.31)			(95.7)			
No. 4	110.67	11.33	112.26	123.59	10.2	101.4	111.7	− 12.92	
No. 5	141.38	10.60	132.00	142.60	7.5	93.4	100.9	− 1.22	
No. 6	91.55	9.64		91.51	10.5		100.0	+ .04	
	(105.41)		(90.08)			(85.4)			
Total	681.15	57.75		699.17	8.5		102.6	− 18.02	
	(723.49)		(676.15)			(93.5)			
Average	15.48	1.31		15.89				− .41	
	(15.39)		(14.39)						
Preservative period.									
First subperiod:									
No. 1	222.18	18.12	202.32	220.44	8.2	91.1	99.2	+ 1.74	6.0
No. 2	205.60	15.36	171.64	187.00	7.5	83.5	91.0	+ 18.60	6.0
No. 3	175.06		137.49	152.82		78.5	87.3	+ 22.24	6.0
	[190.99]	[16.78]			[8.8]				
No. 4	180.93	16.94	156.61	173.55	9.4	86.6	95.9	+ 7.38	6.0
No. 5	233.62	17.94	195.34	213.28	7.7	83.6	91.3	+ 20.34	6.0
No. 6	170.89	18.54	139.90	158.44	10.9	81.9	92.7	+ 12.45	5.0
Total	1,188.28		1,003.30	1,105.53		84.4	93.0	+ 82.75	35.0
	[1,201.21]	[103.68]			[8.6]				
Average	16.74		14.13	15.57				+ 1.17	
	[16.73]	[1.44]							
Second subperiod:									
No. 1	221.67	15.73	203.53	219.26	7.1	91.8	98.9	+ 2.41	6.0
No. 2	192.37	15.09	161.95	177.04	7.8	84.2	92.0	+ 15.33	6.0
No. 3	193.71	18.02	160.82	178.84	9.3	83.0	92.3	+ 14.87	6.0
No. 4	197.79	19.54	175.40	194.93	9.9	88.7	98.6	+ 2.86	6.0
No. 5	204.33	14.51		189.10	7.1		92.5	+ 15.23	6.0
	(223.21)		(189.02)			(84.7)			
No. 6	174.07	19.22	146.43	165.65	11.0	84.1	95.2	+ 8.42	6.0
Total	1,183.91	102.11		1,124.82	8.6		95.0	+ 59.12	36.0
	(1,202.85)		(1,037.15)			(86.2)			
Average	16.68	1.44		15.84				+ .84	
	(16.71)		(14.40)						
Subperiods 1 and 2: Total	2,372.22			2,230.35			94.0	+141.87	71.0
	(2,391.13)		(2,040.45)			(85.3)			
	[2,388.15]	[205.79]			[8.6]				
Average	16.71			15.71				+ 1.00	
	(16.72)		(14.27)						
	[16.70]	[1.44]							

TABLE LV.—*General summary of nitrogen balances.*

Period and series.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)
Fore period:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*
Series I	566.765			496.708			87.6	+ 70.057
	(583.941)		(459.991)			(78.8)		
	[600.350]	[53.197]			[8.9]			
II[a]	259.53	27.28		233.07	10.5		89.8	+ 26.460
	(335.90)		(268.90)			(80.1)		
III	589.74			562.19			95.3	+ 27.550
	(606.51)		(525.52)			(86.6)		
	[603.90]	[50.018]			[8.3]			
IV	419.95	31.34		397.49	7.5		94.7	+ 22.460
	(436.66)		(378.18)			(86.6)		
V	361.03	29.54		374.14	8.2		103.6	− 13.11
	(373.49)		(356.08)			(95.3)		
Total	1,937.485			1,830.528			94.5	+106.957
	(2,000.601)		(1,719.771)			(86.0)		
	[1,985.230]	[164.075]			[8.3]			
Average	17.455			16.491				+ .964
	(17.397)		(14.955)					
	[17.414]	[1.439]						
Preservative period:								
Series I	1,246.47			1,144.50			91.8	+101.97
	(1,299.56)		(1,068.77)			(82.2)		
	[1,262.45]	[121.181]			[9.6]			
II[a]	409.80	47.15		365.04	11.5		89.1	+ 44.76
	(448.96)		(351.11)			(78.2)		
III	769.33	64.532		738.34	8.4		96.0	+ 30.99
	(785.05)		(685.73)			(87.3)		
IV	983.25	82.55	816.46	899.01	8.4	83.0	91.4	+ 84.24
V	2,581.74			2,472.01			95.7	+109.73
	(2,633.92)		(2,306.31)			(87.6)		
	[2,597.67]	[212.82]			[8.2]			
Total	5,580.79			5,253.86			94.1	+326.93
	(5,701.78)		(4,877.27)			(85.5)		
	[5,612.70]	[481.083]			[8.6]			
Average	17.44			16.42				+ 1.02
	(17.44)		(14.92)					
	[17.43]	[1.494]						
After period:								
Series I	986.66			886.24			89.8	+100.42
	(1,006.56)		(808.35)			(80.3)		
	[1,004.18]	[95.213]			[9.5]			
II[a]								
III	501.31			422.53			84.3	+ 78.78
	(564.02)		(429.75)			(76.2)		
	[518.66]	[37.714]			[7.3]			
IV	370.75	29.70	322.81	352.51	8.0	87.1	95.1	+ 18.24
V	473.38	44.79		445.44	9.5		94.1	+ 27.94
	(490.82)		(417.67)			(85.1)		
Total	2,332.10			2,106.72			90.3	+225.38
	(2,432.15)		(1,978.58)			(81.4)		
	[2,366.97]	[207.417]			[8.8]			
Average	17.53			15.84				+ 1.69
	(17.50)		(14.23)					
	[17.53]	[1.536]						

[a] This series not included in total; all members ill in the after period.

PHOSPHORIC-ACID TABLES.

TABLE LVI.—*Phosphoric-acid balances for Series I.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	4.814	2.629	2.842	5.471	54.6	59.0	113.6	0.657	....
17	4.603	2.050	2.329	4.379	44.5	50.6	95.1	+ .224	....
18	5.746	1.861	2.654	4.515	32.4	46.2	78.6	+1.231	....
19	4.927	1.922	2.464	4.386	39.0	50.0	89.0	+ .541	....
20	4.653	3.604	} 5.265	10.815	57.4	54.5	111.9	−1.152	....
21	5.010	1.946							....
Total	29.753	14.012	15.554	29.566	47.1	52.3	99.4	+ .187	....
Average	4.959	2.335	2.592	4.927	....	....	....	+ .032	....
Preservative period.									
First subperiod:									
1902—Dec. 22	4.735	2.402	2.816	5.218	50.7	59.5	110.2	−0.483	1.0
23	4.550	.943	2.675	3.618	20.7	58.8	79.5	+ .932	1.0
24	4.240	1.915	3.073	4.988	45.1	72.5	117.6	− .748	1.0
25	4.830	1.996	3.146	5.142	41.3	65.2	106.5	− .312	1.0
26	5.320	1.632	2.639	4.271	30.7	49.6	80.3	+1.049	1.0
Total	23.675	8.888	14.349	23.237	37.5	60.6	98.1	+ .438	5.0
Average	4.735	1.778	2.869	4.647	....	....	....	+ .088	....
Second subperiod:									
1902—Dec. 27	4.924	2.168	3.234	5.402	41.0	65.7	109.7	−0.478	2.0
28	5.000	1.826	2.455	4.281	36.5	49.1	85.6	+ .719	2.0
29	5.490	1.557	2.596	4.153	28.3	47.3	75.6	+1.337	2.0
30	(5.240)	Lost.	(2.568)	....	....	(49.0)	....	....	2.0
Total	15.414	5.551	....	13.836	36.0	....	89.8	+1.578	} 8.0
	(20.654)	....	(10.853)	....	....	(52.5)	....	....	
Average	5.138	1.850	....	4.612	....	....	....	+ .526	....
	(5.164)	....	(2.713)	....	....	....	....	....	....
Third subperiod:									
1902—Dec. 31	3.91	1.474	2.142	3.616	37.7	54.8	92.5	+0.294	3.0
1903—Jan. 1	3.57	.899	2.693	3.592	25.2	75.4	100.6	− .022	3.0
2	3.20	2.130	2.480	4.610	66.6	77.5	144.1	− .410	3.0
3	2.98	1.830	3.001	4.831	61.4	100.7	162.1	−1.851	3.0
Total	13.66	6.333	10.316	16.649	46.4	75.5	121.9	−2.989	12.0
Average	3.42	1.583	2.579	4.162	....	....	....	− .742	....
Entire preservative period:									
Total	52.849	20.772	....	53.722	39.3	....	101.7	−0.873	} 25.0
	(58.089)	....	(35.518)	....	....	(61.1)	....	....	
Average	4.404	1.731	....	4.477	....	....	....	− .073	....
	(4.468)	....	(2.732)	....	....	....	....	....	....
After period.									
1903—Jan. 4	5.09	1.884	2.496	4.380	37.0	49.1	86.1	+0.710	....
5	5.16	2.240	2.704	4.944	43.4	52.4	95.8	+ .216	....
6	4.45	.335	2.570	5.920	75.3	57.7	133.0	−1.470	....
7	5.03	2.603	2.181	4.784	51.7	43.4	95.1	+ .246	....
8	4.69	2.204	2.782	4.986	47.0	59.3	106.3	− .296	....
9	(5.07)	Broken.	(2.509)	....	....	(49.4)	....	....	....
10	4.66	1.758	3.024	4.782	37.7	64.9	102.6	− .122	....
11	4.58	1.976	2.446	4.422	43.2	53.4	96.6	+ .158	....
12	5.30	2.844	2.918	5.762	53.7	55.0	108.7	− .462	....
13	4.31	2.544	1.344	3.888	58.6	31.0	89.6	+ .452	....
Total	43.30	21.403	....	43.868	49.4	....	101.3	− .568	....
	(48.37)	....	(24.974)	....	....	(51.6)	....	....	....
Average	4.81	2.378	....	4.874	....	....	....	− .064	....
	(4.84)	....	(2.497)	....	....	....	....	....	....

TABLE LVI.—*Phosphoric-acid balances for Series I*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	3.414	1.421	2.597	4.018	41.6	76.1	117.7	−0.604	....
17	4.190	1.976	2.557	4.533	47.2	61.0	108.2	− .343	....
18	5.128	(a)	2.835	2.835	(a)	55.3	55.3	+2.293	....
19	4.573	2.919	2.829	5.748	63.8	61.9	125.7	−1.175	....
20	4.013	1.831	5.647	9.004	45.6	64.6	103.0	− .264	....
21	4.727	1.526							....
Total	26.045	9.673	16.465	26.138	37.1	63.2	100.3	− .093	....
Average	4.341	1.612	2.744	4.356	....	....	....	− .016	....
Preservative period.									
First subperiod:									
1902—Dec. 22	4.854	2.173	2.495	4.668	44.8	51.4	96.2	+0.186	1.0
23	4.02	1.480	2.974	4.454	36.8	74.0	110.8	− .434	1.0
24	4.16	1.396	3.006	4.402	33.6	72.2	105.8	− .242	1.0
25	3.34	1.223	2.295	3.518	36.6	68.7	105.3	− .178	1.0
26	4.83	1.428	2.476	3.904	29.6	51.3	80.8	+ .926	1.0
Total	21.204	7.700	13.246	20.946	36.3	62.5	98.8	+ .258	5.0
Average	4.241	1.540	2.649	4.189	....	....	....	+ .052	....
Second subperiod:									
1902—Dec. 27	4.03	1.705	2.797	4.502	42.3	69.4	111.7	−0.472	2.0
28	4.35	1.934	2.442	4.376	44.5	56.1	100.6	− .026	2.0
29	4.38	1.480	2.644	4.124	33.8	60.4	94.2	+ .256	2.0
30	4.24	.979	2.643	3.622	23.1	62.3	85.4	+ .618	2.0
Total	17.00	6.098	10.526	16.624	35.9	61.9	97.8	+ .376	8.0
Average	4.25	1.524	2.632	4.156	....	....	....	+ .094	....
Third subperiod:									
1902—Dec. 31	3.67	1.383	2.736	4.119	37.7	74.5	112.2	−0.449	3.0
1903—Jan. 1	4.06	1.399	1.918	3.317	34.5	47.2	81.7	+ .743	3.0
2	4.71	.998	3.270	4.268	21.2	69.4	90.6	+ .442	3.0
3	3.60	1.445	2.331	3.776	40.1	64.8	104.9	− .176	3.0
Total	16.04	5.225	10.255	15.480	32.6	63.9	96.5	+ .560	12.0
Average	4.01	1.306	2.564	3.870	....	....	....	+ .140	....
Entire preservative period:									
Total	54.244	19.023	34.027	53.050	35.1	62.7	97.8	+1.194	25.0
Average	4.173	1.386	2.617	4.081	....	....	....	+ .092	....
After period.									
1903—Jan. 4	3.14	0.753	2.401	3.154	23.9	76.5	100.4	−0.014	....
5	3.98	1.253	2.201	3.454	31.5	55.3	86.8	+ .526	....
6	3.21	1.472	2.851	4.323	45.9	88.8	134.7	−1.113	....
7	3.89	.947	2.613	3.560	24.3	67.2	91.5	+ .330	....
8	3.53	1.448	2.314	3.762	41.0	65.6	106.6	− .232	....
9	4.27	1.404	2.568	3.972	32.8	60.1	93.0	+ .298	....
10	4.86	1.745	2.772	4.517	35.9	57.0	92.9	+ .343	....
11	4.29	2.114	2.600	4.714	49.3	60.6	109.9	− .424	....
12	4.34	1.504	2.568	4.072	34.6	59.2	93.8	+ .268	....
13	3.99	1.806	[b] 3.650	5.456	45.2	91.5	136.7	−1.466	....
Total	39.50	14.446	26.538	40.984	36.6	67.2	103.8	−1.484	....
Average	3.95	1.444	2.654	4.098	....	....	....	− .148	....

[a] No movement.

[b] Probably error in volume for date.

TABLE LVI.—*Phosphoric-acid balances for Series I*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	3.619	1.145	2.738	3.883	31.6	75.7	107.3	0.264	....
17	3.673	1.640	1.781	3.422	44.7	48.5	93.2	+ .251	....
18	3.719	.819	2.166	2.985	22.0	58.3	80.3	+ .734	....
19	4.408	.533	3.292	3.825	12.1	74.7	86.8	+ .583	....
20	4.275	1.356	5.126	6.820	22.1	67.8	90.3	+ .744	....
21	3.289	.338							....
Total	22.983	5.831	15.104	20.935	25.4	65.7	91.1	+2.048	....
Average	3.830	.972	2.517	3.489	....	....	....	+ .341	....
Preservative period.									
First subperiod:									
1902—Dec. 22	4.28	1.993	2.732	4.725	46.6	63.8	110.4	−0.445	1.0
23	3.33	.993	1.919	2.912	29.8	57.6	87.4	+ .418	1.0
24	2.98	.705	2.523	3.228	23.7	84.7	108.3	− .248	1.0
25	2.61	.428	3.024	3.452	16.4	115.9	132.3	− .842	1.0
26	3.29	1.089	2.268	3.357	33.1	68.9	102.0	− .067	1.0
Total	16.49	5.208	12.466	17.674	31.6	75.6	107.2	−1.184	5.0
Average	3.30	1.042	2.493	3.535	....	....	....	.235	....
Second subperiod:									
1902—Dec. 27	3.45	1.255	2.106	3.361	36.4	61.0	97.4	+0.089	2.0
28	3.34	.869	2.116	2.985	26.0	63.4	89.4	+ .355	2.0
29	3.69	.927	2.070	2.997	25.1	56.1	81.2	+ .693	2.0
30	3.38	1.165	2.167	3.332	34.5	64.1	98.6	+ .048	2.0
Total	13.86	4.216	8.459	12.675	30.4	61.1	91.5	+1.185	8.0
Average	3.46	1.054	2.115	3.169	....	....	....	+ .291	....
Third subperiod:									
1902—Dec. 31	3.57	1.226	1.463	2.689	34.3	41.0	75.3	+0.881	3.0
1903—Jan. 1	2.25	.758	2.496	3.254	33.7	110.9	144.6	1.004	7.0
2	2.37	.430	2.128	2.558	18.1	89.8	107.9	− .188	2.0
3	3.06	.677	2.125	2.802	22.2	69.4	91.6	+ .258	2.5
Total	11.25	3.091	8.212	11.303	27.5	73.0	100.5	− .053	14.5
Average	2.81	.773	2.053	2.826	....	....	....	− .016	....
Entire preservative period:									
Total	41.60	12.515	29.137	41.652	30.1	70.0	100.1	−0.052	27.5
Average	3.20	.963	2.241	3.204	....	....	....	− .004	....
After period.									
1903—Jan. 4	2.71	1.016	1.915	2.931	37.5	70.7	108.2	− 0.221	....
5	3.74	.357	2.032	2.389	9.6	51.3	63.9	+1.351	....
6	3.16	.499	2.163	2.662	15.8	68.4	84.2	+ .498	....
7	3.57	1.560	2.098	3.658	43.7	58.8	102.5	− .088	....
8	3.50	.841	1.997	2.838	24.0	57.1	81.1	+ .662	....
9	3.78	.671	2.394	3.065	17.8	63.3	81.1	+ .715	....
10	3.84	1.522	2.442	3.964	39.6	63.6	103.2	− .124	....
11	2.92	.614	2.224	2.838	21.0	76.2	97.2	+ .082	....
12	4.12	1.083	2.034	3.117	26.3	49.4	75.7	+1.003	....
13	3.19	.368	2.622	2.990	11.5	82.2	93.7	+ .200	....
Total	34.530	8.531	21.921	30.452	24.7	63.5	88.2	+4.078	....
Average	3.453	.853	2.192	3.045	....	....	....	+ .408	....

TABLE LVI.—*Phosphoric-acid balances for Series I*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	4.780	0.980	2.995	3.975	20.5	62.7	83.2	+0.805	....
17	(4.621)	Lost.	(2.877)	....	....	(62.3)	....	....	....
18	5.699	1.255	3.001	4.256	22.0	52.7	74.7	+1.443	....
19	4.458	1.362	2.965	4.327	30.6	66.5	97.1	+ .131	....
20	3.540	1.021	} 6.350	{ 7.371	} 46.7	102.3	149.0	−3.831	....
21	2.666	1.878		1.878					....
Total	21.143	6.496	....	21.807	30.7	....	103.1	− .664	....
	(25.764)	....	(18.188)	....	....	(70.6)	....	....	....
Average	4.229	1.299	....	4.361	....	....	....	− .132	....
	(4.294)	....	(3.031)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1902—Dec. 22	4.594	1.005	3.410	4.415	21.9	74.2	96.1	+0.179	1.0
23	3.45	1.180	3.780	4.960	34.2	109.6	143.8	−1.510	1.0
24	4.35	.965	3.460	4.425	22.2	79.5	101.7	− .075	1.0
25	4.30	1.111	3.747	4.858	25.8	87.1	113.0	− .558	1.0
26	4.90	2.055	3.288	5.343	41.9	67.1	109.0	− .443	1.0
Total	21.594	6.316	17.685	24.001	29.2	81.9	111.1	−2.407	5.0
Average	4.319	1.263	3.537	4.800	....	....	....	− .481	....
Second subperiod:									
1902—Dec. 27	4.71	1.160	3.013	4.173	24.6	64.0	88.6	+0.537	2.0
28	4.56	1.220	3.377	4.597	26.8	74.1	100.8	− .037	2.0
29	4.68	1.475	3.096	4.571	31.5	66.2	97.7	+ .109	2.0
30	4.85	1.165	3.099	4.264	24.0	63.9	87.9	+ .586	2.0
Total	18.80	5.020	12.585	17.605	26.7	66.9	93.6	+1.195	8.0
Average	4.70	1.255	3.146	4.401	....	....	....	+ .299	....
Third subperiod:									
1902—Dec. 31	4.46	1.088	3.156	4.244	24.4	70.8	95.2	+0.216	3.0
1903—Jan. 1	2.99	.808	2.489	3.297	27.0	83.2	110.3	− .302	1.0
2	4.39	1.361	2.832	4.193	31.0	64.5	95.5	+ .197	3.0
3	3.71	.598	2.604	3.202	16.1	70.2	86.3	+ .508	2.5
Total	15.55	3.855	11.081	14.936	24.8	71.3	96.1	+ .614	9.5
Average	3.89	.964	2.770	3.734	....	....	....	+ .156	....
Entire preservative period:									
Total	55.944	15.191	41.351	56.542	27.2	73.9	101.1	−0.598	22.5
Average	4.303	1.169	3.181	4.349	....	....	....	− .046	....
After period.									
1903—Jan. 4	3.32	1.250	2.622	3.872	37.7	79.0	116.6	−0.552	....
5	4.01	.791	2.278	3.069	19.7	56.8	76.5	+ .941	....
6	3.32	1.148	2.611	3.759	34.6	78.6	113.2	− .439	....
7	4.10	1.230	2.954	4.184	30.0	72.0	102.0	− .084	....
8	3.88	1.270	2.688	3.958	32.7	69.3	102.0	− .078	....
9	3.28	1.569	2.736	4.305	47.8	83.4	131.2	−1.025	....
10	3.74	.698	2.570	3.268	18.7	68.7	87.4	+ .472	....
11	4.16	1.060	2.510	3.570	25.5	60.3	85.8	+ .590	....
12	4.26	2.301	3.069	5.370	54.0	72.0	126.1	−1.110	....
13	3.99	1.822	2.570	4.392	45.7	64.4	110.1	− .402	....
Total	38.06	13.139	26.608	39.747	34.5	69.9	104.4	−1.687	....
Average	3.81	1.314	2.661	3.975	....	....	....	− .165	....

TABLE LVI.—*Phosphoric-acid balances for Series I*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.									
	Grams.	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	4.529	0.905	2.568	3.473	20.0	56.7	76.7	+1.056	....
17	3.723	1.328	2.735	4.063	35.7	73.4	109.1	− .340	....
18	5.742	1.666	2.716	4.382	29.0	47.3	76.3	+1.360	....
19	4.650	2.201	2.650	4.851	47.3	57.0	104.3	.201	....
20	4.402	1.496	5.263	9.187	41.5	55.7	97.2	+ .265	....
21	5.050	2.428							....
Total	28.096	10.024	15.932	25.956	35.7	56.7	92.4	+2.140	....
Average	4.683	1.671	2.655	4.326	....	....	....	+ .357	....
Preservative period.									
First subperiod:									
1902—Dec. 22	3.603	1.788	2.694	4.482	49.6	74.8	124.4	−0.879	1.0
23	4.55	1.841	3.379	5.220	40.5	74.2	114.7	− .670	1.0
24	4.55	1.380	2.840	4.220	30.3	62.4	92.7	+ .330	1.0
25	4.24	1.673	2.882	4.555	39.5	68.0	107.5	− .315	1.0
26	4.99	1.271	2.684	3.955	25.5	53.8	79.3	+1.035	1.0
Total	21.933	7.953	14.479	22.432	36.3	66.0	102.3	− .499	5.0
Average	4.387	1.591	2.896	4.486	....	....	....	− .099	....
Second subperiod:									
1902—Dec. 27	4.74	1.973	2.772	4.745	41.6	58.5	100.1	+0.005	2.0
28	4.86	1.929	2.493	4.422	39.7	51.3	91.0	+ .438	2.0
29	4.77	1.662	2.884	4.546	34.8	60.5	95.3	+ .224	2.0
30	5.18	1.679	2.190	3.869	32.4	42.3	74.7	+1.311	2.0
Total	19.55	7.243	10.339	17.582	37.0	52.9	89.9	+1.968	8.0
Average	4.89	1.810	2.585	4.395	....	....	....	+ .495	....
Third subperiod:									
1902—Dec. 31	4.18	2.407	2.894	5.301	57.6	69.2	126.8	−1.121	3.0
1903—Jan. 1	5.80	1.698	2.412	4.110	29.3	41.6	70.9	+1.690	3.0
2	4.61	1.696	1.584	3.280	36.8	34.4	71.2	+1.330	3.0
3	4.46	1.500	3.073	4.573	33.6	68.9	102.5	− .113	3.0
Total	19.05	7.301	9.963	17.264	38.3	52.3	90.6	+1.786	12.0
Average	4.76	1.825	2.491	4.316	....	....	....	....	....
Entire preservative period:									
Total	60.533	22.497	34.781	57.278	37.2	57.5	94.7	+3.255	25.0
Average	4.656	1.731	2.675	4.406	....	....	....	+ .250	....
After period.									
1903—Jan. 4	4.69	0.941	2.923	3.864	20.1	62.3	82.4	+0.826	....
5	4.67	2.141	2.576	4.717	45.8	55.2	101.0	− .047	....
6	4.33	2.217	2.502	4.719	51.2	57.8	109.0	− .389	....
7	4.68	.958	2.921	3.879	20.5	62.4	82.9	+ .801	....
8	4.38	1.841	2.413	4.254	42.0	55.1	97.1	+ .126	....
9	4.62	1.095	2.650	3.745	23.7	57.4	81.1	+ .875	....
10	4.70	1.450	2.856	4.306	30.8	60.8	91.6	+ .394	....
11	4.53	1.163	2.594	3.757	25.7	57.3	82.9	+ .773	....
12	4.29	1.012	2.722	3.734	23.6	63.4	87.0	+ .556	....
13	4.06	1.090	3.391	4.481	26.8	83.5	110.3	− .421	....
Total	44.95	13.908	27.548	41.456	30.9	61.3	92.2	+3.494	....
Average	4.50	1.391	2.755	4.146	....	....	....	+ .354	....

TABLE LVI.—*Phosphoric-acid balances for Series I*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	2.341	1.429	1.728	3.157	61.0	73.8	134.9	−0.816	....
17	2.955	(*a*)	2.064	2.064	....	69.8	69.8	+ .891	....
18	3.197	.852	2.094	2.946	26.6	65.5	92.1	+ .251	....
19	2.399	.871	2.098	2.969	36.3	87.5	123.8	− .570	....
20	1.286	.720	} 3.352	4.149	22.0	92.5	114.5	− .524	....
21	2.339	.077							....
Total	14.517	3.949	11.336	15.285	27.2	78.1	105.3	− .768	....
Average	2.420	.658	1.889	2.548	....	....	....	− .128	....
Preservative period.									
First subperiod:									
1902—Dec. 22	2.113	1.234	1.971	3.205	58.4	93.3	151.7	−1.092	1.0
23	1.86	(*a*)	1.981	1.981	....	106.5	106.5	− .121	1.0
24	1.60	.518	1.744	2.262	32.4	109.0	141.4	− .662	1.0
25	2.01	.514	1.504	2.018	25.6	74.8	100.4	− .008	1.0
26	(2.72)	Lost.	(1.824)	....	....	(67.1)	....	....	1.0
Total	7.583	2.266	....	9.466	29.9	....	124.8	−1.883	} 5.0
	(10.303)	....	(9.024)	....	....	(87.6)	....	....	
Average	1.896	.566	....	2.366	....	....	....	− .470	....
	(2.061)	....	(1.805)	....	....	....	....	....	....
Second subperiod:									
1902—Dec. 27	2.38	(*a*)	1.208	1.208	....	50.8	50.8	+1.172	2.0
28	2.10	0.985	1.820	2.805	46.9	86.7	133.6	− .705	2.0
29	2.47	1.020	1.669	2.689	41.3	67.6	108.9	− .219	2.0
30	2.12	.484	1.555	2.039	22.8	73.3	96.2	+ .081	2.0
Total	9.07	2.489	6.252	8.741	27.4	68.9	96.4	+ .329	8.0
Average	2.27	.622	1.563	2.185	....	....	....	+ .085	....
Third subperiod:									
1902—Dec. 31	2.22	2.272	1.417	3.689	102.3	63.8	166.2	−1.469	3.0
1903—Jan. 1	2.63	.904	.984	1.888	34.4	37.4	71.8	+ .742	3.0
2	2.63	.737	1.495	2.232	28.0	56.8	84.9	+ .398	3.0
3	2.13	.628	.392	1.020	29.5	18.4	47.9	+1.110	3.0
Total	9.61	4.541	4.288	8.829	47.3	44.6	91.9	+ .781	12.0
Average	2.40	1.135	1.072	2.207	....	....	....	+ .193	....
Entire preservative period:									
Total	26.263	9.296	....	27.036	35.4	....	102.9	−0.773	} 25.0
	(28.983)	....	(19.564)	....	....	(67.5)	....	....	
Average	2.189	.775	....	2.253	....	....	....	− .064	....
	(2.229)	....	(1.505)	....	....	....	....	....	....
After period.									
1903—Jan. 4	2.18	0.693	2.830	3.523	31.8	129.8	161.6	−1.343	....
5	2.38	.498	1.518	2.016	20.9	63.8	84.7	+ .364	....
6	1.70	.929	1.596	2.525	54.6	93.9	148.5	− .825	....
7	2.40	.814	2.392	3.206	33.9	99.7	133.6	− .806	....
8	2.06	1.550	1.320	2.870	75.2	64.1	139.3	− .810	....
9	3.11	(*a*)	1.947	1.947	....	62.6	62.6	+1.163	....
10	3.14	1.068	1.699	2.767	34.0	54.1	88.1	+ .373	....
11	2.33	.575	1.848	2.423	24.7	79.3	104.0	− .093	....
12	2.20	.891	1.474	2.365	40.5	67.0	107.5	− .165	....
13	2.34	.784	1.538	2.322	33.5	65.7	99.2	+ .018	....
Total	23.84	7.802	18.162	25.964	32.7	76.2	108.9	−2.124	....
Average	2.38	.780	1.816	2.596	....	....	....	− .216	....

a No movement.

Table LVII.—*Summary of phosphoric-acid balances for Series I.*

Six men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	29.753	14.012	15.554	29.566	47.1	52.3	99.4	+0.187	......
No. 2	26.045	9.673	16.465	26.138	37.1	63.2	100.3	− .093	......
No. 3	22.983	5.831	15.104	20.935	25.4	65.7	91.1	+2.048	......
No. 4	21.143	6.496	....	21.807	30.7	......	103.1	− .664	......
	(25.764)	....	(18.188)	....	......	(70.6)	......	....	......
No. 5	28.096	10.024	15.932	25.956	35.7	56.7	92.4	+2.140	......
No. 6	14.517	3.949	11.336	15.285	27.2	78.1	105.3	− .768	......
Total	142.537	49.985	....	139.687	35.1	......	98.0	+2.850	......
	(147.158)	....	(92.579)	....	......	(62.9)	......	....	......
Average	4.072	1.428	....	3.991	......	......	......	+ .081	......
	(4.088)	....	(2.572)	....	......	......	......	....	......
Preservative period.									
First subperiod:									
No. 1	23.675	8.888	14.349	23.237	37.5	60.6	98.1	+0.438	5.0
No. 2	21.204	7.700	13.246	20.946	36.3	62.5	98.8	+ .258	5.0
No. 3	16.49	5.208	12.466	17.674	31.6	75.6	107.2	−1.184	5.0
No. 4	21.594	6.316	17.685	24.001	29.2	81.9	111.1	−2.407	5.0
No. 5	21.933	7.953	14.479	22.432	36.3	66.0	102.3	− .499	5.0
No. 6	7.583	2.266	....	9.166	29.9	......	124.8	−1.883	5.0
	(10.303)	....	(9.024)	....	......	(87.6)	......	....	
Total	112.479	38.331	....	117.756	34.1	......	104.7	−5.277	30.0
	(115.199)	....	(81.249)	....	......	(70.5)	......	....	
Average	3.879	1.322	....	4.061	......	......	......	− .182	......
	(3.840)	....	(2.708)	....	......	......	......	....	
Second subperiod:									
No. 1	15.414	5.551	....	13.836	36.0	......	89.8	+1.578	8.0
	(20.654)	....	(10.853)	....	......	(52.5)	......	....	
No. 2	17.00	6.098	10.526	16.624	35.9	61.9	97.8	+ .376	8.0
No. 3	13.86	4.216	8.459	12.675	30.4	61.1	91.5	+1.185	8.0
No. 4	18.80	5.020	12.585	17.605	26.7	66.9	93.6	+1.195	8.0
No. 5	19.55	7.243	10.339	17.582	37.0	52.9	89.9	+1.968	8.0
No. 6	9.07	2.489	6.252	8.741	27.4	68.9	96.4	+ .329	8.0
Total	93.694	30.617	....	87.063	32.7	......	92.9	+6.631	48.0
	(98.934)	....	(59.014)	....	......	(59.6)	......	....	
Average	4.074	1.331	....	3.785	......	......	......	+ .289	......
	(4.122)	....	(2.459)	....	......	......	......	....	......
Third subperiod:									
No. 1	13.66	6.333	10.316	16.649	46.4	75.5	121.9	−2.989	12.0
No. 2	16.04	5.225	10.255	15.480	32.6	63.9	96.5	+ .560	12.0
No. 3	11.25	3.091	8.212	11.303	27.5	73.0	100.5	− .053	14.5
No. 4	15.55	3.855	11.081	14.936	24.8	71.3	96.1	+ .614	9.5
No. 5	19.05	7.301	9.963	17.264	38.3	52.3	90.6	+1.786	12.0
No. 6	9.61	4.541	4.288	8.829	47.3	44.6	91.9	+ .781	12.0
Total	85.16	30.316	51.115	81.461	35.6	63.6	99.2	+ .699	72.0
Average	3.55	1.264	2.255	3.519	......	......	......	+ .031	......
Entire preservative period:									
No. 1	52.849	20.772	....	53.722	39.3	......	101.7	−0.873	25.0
	(58.089)	....	(35.518)	....	......	(61.1)	......	....	
No. 2	54.241	19.023	34.027	53.050	35.1	62.7	97.8	+1.191	25.0
No. 3	41.60	12.515	29.137	41.652	30.1	70.0	100.1	− .052	27.5
No. 4	55.914	15.191	41.351	56.542	27.2	73.9	101.1	− .598	22.5
No. 5	60.533	22.497	34.781	57.278	37.2	57.5	94.7	+3.255	25.0
No. 6	26.263	9.296	....	27.036	35.4	......	102.9	− .773	25.0
	(28.983)	....	(19.561)	....	......	(67.5)	......	....	
Total	291.133	99.294	....	289.280	34.1	......	99.3	+2.153	150.0
	(299.393)	....	(191.378)	....	......	(61.9)	......	....	
Average	3.835	1.306	....	3.806	......	......	......	+ .029	......
	(3.838)	....	(2.492)	....	......	......	......	....	......
After period.									
No. 1	43.30	21.403	....	43.868	49.4	......	101.3	−0.568	......
	(48.37)	....	(21.974)	....	......	(51.6)	......	....	......
No. 2	39.50	14.446	26.538	40.984	36.6	67.2	103.8	−1.481	......
No. 3	34.530	8.531	21.921	30.452	24.7	63.5	88.2	+4.078	......
No. 4	38.06	13.139	26.608	39.747	34.5	69.9	104.4	−1.687	......
No. 5	44.95	13.908	27.548	41.456	30.9	61.3	92.2	+3.494	......
No. 6	23.81	7.802	18.162	25.964	32.7	76.2	108.9	−2.124	......
Total	224.18	79.229	....	222.471	35.3	......	99.2	+1.709	......
	(229.25)	....	(115.751)	....	......	(63.6)	......	....	......
Average	3.80	1.343	....	3.771	......	......	......	+ .029	......
	(3.82)	....	(2.129)	....	......	......	......	....	......

TABLE LVIII.—*Phosphoric-acid balances for Series II.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(4.38)	(a)	(2.19)	....	....	(50.0)	....	....	....
20	(4.37)	(a)	(2.04)	....	....	(46.7)	....	....	....
21	3.34	2.17	2.51	4.68	65.0	75.1	140.1	−1.34	....
22	3.13	1.75	2.32	4.07	55.9	74.1	130.0	− .94	....
23	5.16	1.87	2.90	4.77	36.2	56.2	92.4	+ .39	....
24	3.85	1.06	2.32	3.38	27.5	60.3	87.8	+ .47	....
25	3.97	2.29	2.52	4.81	57.7	63.5	121.2	− .84	....
26	4.02	1.40	2.01	3.41	34.8	50.0	84.8	+ .61	....
27	4.03	1.61	2.35	3.96	40.0	58.3	98.3	+ .07	....
Total	27.50	12.15	....	29.08	44.2	....	105.7	−1.58	....
	(36.25)	....	(21.16)	....	....	(58.4)	....	....	....
Average	3.93	1.74	....	4.15	....	....	....	− .22	....
	(4.03)	....	(2.35)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	4.46	3.61	2.68	6.29	80.9	60.1	141.0	−1.83	1.0
29	4.18	.83	1.65	2.48	19.9	39.5	59.3	+1.70	1.0
30	3.78	1.47	2.22	3.69	38.9	58.7	97.6	+ .09	1.0
31	3.50	2.20	2.29	4.49	62.9	65.4	128.3	− .99	1.0
Total	15.92	8.11	8.84	16.95	50.9	55.5	106.5	−1.03	4.0
Average	3.98	2.03	2.21	4.24	....	....	....	− .76	....
Second subperiod:									
1903—Feb. 1	3.99	(b)	2.21	2.21	....	55.4	55.4	+1.78	2.0
2	3.77	3.03	2.62	5.65	80.4	69.5	149.9	−1.88	2.0
3	3.64	.97	2.26	3.23	26.6	62.1	88.7	+ .41	2.0
4	3.74	1.11	2.24	3.35	29.7	59.9	89.6	+ .39	2.0
Total	15.14	5.11	9.33	14.44	33.7	61.6	95.4	+ .70	8.0
Average	3.78	1.28	2.33	3.61	....	....	....	+ .17	....
Third subperiod:									
1903—Feb. 5	3.67	1.73	1.96	3.69	47.1	53.4	100.5	−0.02	3.0
6	3.58	1.43	2.23	3.66	39.9	62.3	102.2	− .08	3.0
7	4.04	2.21	2.64	4.85	54.7	65.3	120.0	− .81	3.0
8	3.86	1.73	2.19	3.92	44.8	56.7	101.6	− .06	3.0
Total	15.15	7.10	9.02	16.12	46.9	59.5	106.4	− .97	12.0
Average	3.79	1.78	2.26	4.03	....	....	....	− .24	....
Subperiods 1, 2, and 3:									
Total	46.21	20.32	27.19	47.51	44.0	58.8	102.8	−1.30	24.0
Average	3.85	1.69	2.27	3.96	....	....	....	− .11	....
Fourth subperiod:									
1903—Feb. 9	3.77	1.19	1.73	2.92	31.6	45.9	77.5	+0.85	4.0
10	3.95	1.87	2.28	4.15	47.3	57.7	105.1	− .20	4.0

[a] Not collected. [b] No movement.

TABLE LVIII.—*Phosphoric-acid balances for Series II*—Continued.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(5.13)	(*a*)	(2.85)	....	....	(55.6)	....	....	....
20	(4.89)	(*a*)	(2.61)	....	....	(53.4)	....	....	....
21	4.87	2.09	3.36	5.45	12.9	69.0	111.9	−0.58	....
22	4.65	.84	2.83	3.67	18.0	60.9	78.9	+ .98	....
23	5.79	(*b*)	3.24	3.24	....	56.0	56.0	+2.55	....
24	5.09	2.13	3.05	5.18	41.9	59.9	101.8	− .09	....
25	4.76	2.89	2.70	5.59	60.7	56.7	117.4	− .83	....
26	5.18	2.00	2.92	4.92	38.6	56.4	95.0	+ .26	....
27	4.97	(*b*)	2.91	2.91	....	58.6	58.6	+2.06	....
Total	35.31	9.95	....	30.96	28.2	....	87.7	+4.35	....
	(45.33)	....	(26.47)	....	....	(58.4)	....	....	....
Average	5.01	1.42	....	4.42	....	....	....	+ .62	....
	(5.04)	....	(2.94)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	4.89	2.28	3.16	5.44	46.6	64.6	111.2	−0.55	1.0
29	4.94	2.69	2.73	5.42	54.4	55.3	109.7	− .48	1.0
30	4.82	(*b*)	2.71	2.71	....	56.2	56.2	+2.11	1.0
31	4.77	1.58	2.85	4.43	33.1	59.8	92.9	+ .34	1.0
Total	19.42	6.55	11.45	18.00	33.7	59.0	92.7	+1.42	4.0
Average	4.86	1.64	2.86	4.50	....	....	....	+ .36	....
Second subperiod:									
1903—Feb. 1	4.21	1.86	2.99	4.85	44.2	71.0	115.2	−0.64	2.0
2	4.31	1.42	2.88	4.30	33.0	66.8	99.8	+ .01	2.0
3	(1.15)	Lost.	(.72)	....	....	(62.6)	....	....	.0
4	....	Lost.	(*c*)	....	....	....	....	....	.0
Total	8.52	3.28	....	9.15	38.5	....	107.4	− .63	4.0
	(9.67)	....	(6.59)	....	....	(68.1)	....	....	
Average	4.26	1.64	....	4.58	....	....	....	.32	....
	(3.23)	....	(2.20)	....	....	....	....	....	....
Third subperiod:									
1903—Feb. 5	(3.52)	(*a*)	(2.58)	....	....	(73.3)	....	....	0.0
6	(5.16)	(*a*)	(3.07)	....	....	(59.5)	....	....	.0
7	(4.57)	(*a*)	(2.93)	....	....	(64.1)	....	....	.0
8	(4.83)	(*a*)	(2.39)	....	....	(49.5)	....	....	.0
Total	(18.08)	....	(10.97)	....	....	(60.7)	....	....	.0
Average	(4.52)	....	(2.74)	....	....	....	....	....	....
Subperiods 1, 2, and 3:									
Total	27.94	9.83	....	27.15	35.2	....	97.2	+0.79	8.0
	(47.17)	....	(28.99)	....	....	(61.0)	....	....	
Average	4.66	1.64	....	4.52	....	....	....	+ .14	....
	(4.29)	....	(2.64)	....	....	....	....	....	....

a Discarded. *b* No movement. *c* Not run.

TABLE LVIII.—*Phosphoric-acid balances for Series II*—Continued.

No. 9.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. 2÷1	6 In urine. 3÷1	7 In feces and urine. 4÷1	8 Balance. (1—4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(4.76)	(a)	(2.94)	....	....	(61.8)	....	....	....
20	(4.67)	(a)	(2.71)	....	....	(58.0)	....	....	....
21	4.63	1.43	3.00	4.43	30.9	64.8	95.7	+0.20	....
22	4.44	.39	2.75	3.14	8.8	61.9	70.7	—1.30	....
23	4.87	1.76	2.98	4.74	36.1	61.2	97.3	+ .13	....
24	4.89	(b)	2.89	2.89	....	59.1	59.1	+2.00	....
25	4.78	2.72	2.60	5.32	56.9	54.4	111.3	— .54	....
26	5.07	2.04	2.43	4.47	40.3	47.9	88.2	+ .60	....
27	(4.98)	(a)	(2.44)	....	....	49.0	....	....	....
Total	28.68	8.34	....	24.99	29.0	....	87.1	—3.69	....
	(43.09)	....	(24.74)	....	....	(57.4)	....	....	....
Average	4.78	1.39	....	4.16	....	....	....	+ .62	....
	(4.79)	....	(2.75)	....	....	....	....	....	....
Preservative period.[c]									
First subperiod:									
1903—Jan. 28	1.53	2.00	3.34	5.34	130.7	218.3	349.0	—3.81	1.0
29	4.50	1.56	2.36	3.92	34.7	52.4	87.1	+ .58	1.0
30	4.04	1.39	2.55	3.94	34.4	63.1	97.5	+ .10	1.0
31	....	....	....	....	....	....	....	....	1.0
Total	10.07	4.95	8.25	13.20	49.2	81.9	131.1	—3.13	4.0
Average	3.36	1.65	2.75	4.40	....	....	....	— .04	....
Third subperiod:									
1903—Feb. 5	(3.94)	(a)	(2.24)	....	....	(56.9)	....	....	0.0
6	(3.75)	(a)	(1.93)	....	....	(51.5)	....	....	.0
7	(4.39)	(a)	(1.37)	....	....	(31.2)	....	....	.0
8	(5.46)	(a)	(2.16)	....	....	(39.6)	....	....	.0
Total	(17.54)	....	(7.70)	....	....	(43.9)	....	....	.0
Average	(4.38)	....	(1.92)	....	....	....	....	....	....
Subperiods 1 and 3:									
Total	10.07	4.95	....	13.20	49.2	....	131.1	—3.13	4.0
	27.61	....	(15.95)	....	....	(57.8)	....	....	
Average	3.36	1.65	....	4.40	....	....	....	— .04	....
	3.94	....	(2.27)	....	....	....	....	....	....

[a] Discarded. [b] No movement. [c] Second subperiod not run.

TABLE LVIII.—*Phosphoric-acid balances for Series II*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(3.65)	(*a*)	(2.28)			(62.5)			
20	(4.90)	(*a*)	(2.44)			(49.8)			
21	4.87	1.06	2.81	3.87	21.8	57.7	79.5	+1.00	
22	4.26	1.35	3.05	4.40	31.7	71.6	103.3	− .14	
23	5.48	2.06	2.29	4.35	37.6	41.8	79.4	−1.13	
24	5.01	2.09	2.74	4.83	41.7	54.7	96.4	+ .18	
25	5.24	2.57	2.25	4.82	49.0	42.9	92.0	+ .42	
26	5.30	3.28	2.46	5.74	61.9	46.4	108.3	− .44	
27	3.97	1.58	2.60	4.18	39.8	65.5	105.3	− .21	
Total	34.13	13.99		32.19	41.0		94.3	−1.94	
	(42.68)		(22.92)			(53.7)			
Average	4.88	2.00		4.60				+2.28	
	(4.74)		(2.55)						
Preservative period.									
First subperiod:									
1903—Jan. 28	4.90	1.69	3.14	4.83	34.5	64.1	98.6	+0.07	1.0
29	(5.07)	(*a*)	(2.42)			(47.7)			1.0
30	4.94	1.42	2.74	4.16	28.7	55.5	84.2	+ .78	1.0
31	(4.62)	(*a*)	(2.75)			(59.5)			1.0
Total	9.84	3.11		8.99	31.6		91.4	− .85	4.0
	(19.53)		(11.05)			(56.6)			
Average	4.92	1.56		4.50				+ .42	
	(4.88)		(2.76)						
Second subperiod:									
1903—Feb. 1	4.96	2.86	3.09	5.95	57.7	62.3	120.0	−0.99	2.0
2	4.92	1.20	2.88	4.08	24.4	58.5	82.9	+ .84	2.0
3	4.63	2.07	3.77	5.84	44.7	81.4	126.1	−1.21	2.0
4	4.79	2.52	3.04	5.56	52.6	63.5	116.2	− .77	2.0
Total	19.30	8.65	12.78	21.43	44.8	66.2	111.0	−2.13	8.0
Average	4.82	2.16	3.20	5.36				− .54	
Third subperiod:									
1903—Feb. 5	4.80	2.92	3.42	6.34	60.8	71.2	132.1	−1.54	3.0
6	5.06	(*b*)	3.06	3.06		60.5	60.5	+2.00	3.0
7	4.88	3.18	2.99	6.17	65.2	61.3	126.4	−1.29	3.0
8	5.14	(*b*)	2.86	2.86		55.6	55.6	+2.28	3.0
Total	19.88	6.10	12.33	18.43	30.7	62.0	92.7	+1.45	12.0
Average	4.97	1.52	3.08	4.61				+ .36	
Subperiods 1, 2, and 3:									
Total	49.02	17.86		48.85	36.4		99.7	+0.17	24.0
	(58.71)		(36.16)			(61.6)			
Average	4.90	1.79		4.88				+ .02	
	(4.89)		(3.01)						
Fourth subperiod:									
1903—Feb. 9	5.05	2.70	3.05	5.75	53.5	60.4	113.9	−0.70	4.0
10	(5.00)	(*a*)	(2.47)			(49.4)			4.0

a Discarded. *b* No movement.

TABLE LVIII.—*Phosphoric-acid balances for Series II*—Continued.

NO. 11.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(4.43)	(a)	(2.90)			(65.5)			
20	(4.61)	(a)	(2.65)			(57.5)			
21	4.74	1.47	2.86	4.33	31.0	60.3	91.4	+0.41	
22	4.18	2.78	2.71	5.49	66.5	64.8	131.3	−1.31	
23	5.38	3.50	2.88	6.38	65.1	53.5	118.6	−1.00	
24	5.10	3.50	2.15	5.65	68.6	42.2	110.8	− .55	
25	4.97	1.04	2.89	3.93	20.9	58.2	79.1	+1.04	
26	4.71	1.58	2.98	4.56	32.5	63.3	96.8	+ .15	
27	5.51	2.22	2.91	5.13	40.3	52.8	93.1	+ .38	
Total	34.59	16.09		35.47	46.6		102.6	− .88	
	(43.63)		(24.93)			(57.1)			
Average	4.94	2.30		5.07				− .13	
	(4.85)		(2.77)						
Preservative period.									
First subperiod:									
1903—Jan. 28	5.03	1.20	2.97	4.17	23.9	59.0	82.9	+0.86	1.0
29	5.00	1.71	2.73	4.44	34.2	54.6	88.8	+ .56	1.0
30	5.17	1.43	3.00	4.43	27.7	58.0	85.7	+ .74	1.0
31	4.03	1.89	2.72	4.61	46.9	67.5	114.4	− .58	1.0
Total	19.23	6.23	11.42	17.65	32.4	59.4	91.8	+1.58	4.0
Average	4.81	1.56	2.85	4.41				+ .40	
Second subperiod:									
1903—Feb. 1	4.37	0.78	2.64	3.42	17.9	60.4	78.3	+0.95	2.0
2	4.58	.20	2.63	2.83	4.4	57.4	61.8	+1.75	2.0
3		(a)	(b)						.0
4	[1.33]	[.73]	(b)		[54.9]				.0
Total	8.95		5.27	6.25		58.9	69.8	+2.70	4.0
	[10.28]	[1.71]			[14.2]				
Average	4.48		2.63	3.12				+1.36	
	[1.47]	[2.40]							
Third subperiod:									
1903—Feb. 5	(3.41)	(a)	(2.45)			(71.8)		+0.96	0.0
6	(4.26)	(a)	(2.28)			(53.5)		+1.98	.0
7	(4.29)	(a)	(2.94)			(68.5)		+1.35	.0
8	(4.56)	(a)	(2.11)			(46.3)		+2.45	.0
Total									0.0
	(16.52)		(9.78)			(59.2)			
Average	(4.13)		(2.44)						
Subperiods 1, 2, and 3:									
Total	28.18			23.90			84.8	+4.28	8.0
	(44.70)		(26.47)			(59.2)			
	[46.03]	[8.19]			[17.8]				
Average	4.69			3.95				+ .74	
	(4.70)		(2.65)						
	[6.58]	[1.17]							

a Discarded. b Not run.

TABLE LVIII.—*Phosphoric-acid balances for Series II*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(4.40)	(a)	(2.59)	....	....	(58.7)	....	....	....
20	(4.59)	(a)	(2.49)	....	....	(54.2)	....	....	....
21	4.37	1.54	2.61	4.15	35.2	59.7	95.0	+0.22	....
22	3.82	1.52	2.12	3.64	39.8	55.5	95.3	+ .18	....
23	4.89	1.90	2.22	4.12	38.9	45.4	84.3	+ .77	....
24	4.53	(b)	2.32	2.32	....	51.2	51.2	+2.21	....
25	4.70	1.93	2.07	4.00	41.1	44.0	85.1	+ .70	....
26	4.67	3.47	2.12	5.59	74.3	45.4	119.7	— .92	....
27	4.70	.89	1.81	2.70	18.9	38.5	57.4	+2.00	....
Total	31.68	11.25	....	26.52	35.5	....	83.7	+5.16	....
	(40.67)	....	(20.35)	....	....	(50.0)	....	....	....
Average	4.53	1.87	....	3.79	....	....	....	+ .75	....
	(4.52)	....	(2.26)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	4.79	1.66	2.42	4.08	34.7	50.5	85.2	+0.71	1.0
29	4.93	1.46	2.65	4.11	29.6	53.8	83.4	+ .82	1.0
30	4.77	1.36	2.52	3.88	28.5	52.8	81.3	+ .89	1.0
31	4.55	2.21	2.59	4.80	48.6	56.9	105.5	— .25	1.0
Total	19.01	6.69	10.18	16.87	35.1	53.5	88.6	+2.17	4.0
Average	4.76	1.67	2.54	4.22	....	....	....	+ .55	....
Second subperiod:									
1903—Feb. 1	4.79	1.51	2.61	4.12	31.5	54.5	86.0	+0.67	2.0
2	4.57	2.16	2.46	4.62	47.3	53.8	101.1	— .05	2.0
3	2.48	.42	2.40	2.82	16.9	96.8	113.7	— .34	2.0
4	3.88	.92	2.32	3.24	23.7	59.8	83.5	+ .64	2.0
Total	15.72	5.01	9.79	14.80	31.9	62.3	94.2	+ .92	8.0
Average	3.93	1.25	2.45	3.70	....	....	....	+ .23	....
Third subperiod:									
1903—Feb. 5	3.88	1.64	2.64	4.28	42.3	68.0	110.3	—0.40	3.0
6	3.45	.65	2.84	3.49	18.8	82.3	101.1	— .04	.0
7	1.89	1.59	2.35	3.94	84.1	124.3	208.4	—2.05	.0
8	1.23	1.23	1.81	3.04	100.0	147.2	247.2	—1.81	.0
Total	10.45	5.11	9.64	14.75	49.0	92.1	141.1	—4.30	3.0
Average	2.61	1.28	2.41	3.69	....	....	....	—1.08	....
Subperiods 1, 2, and 3:									
Total	45.21	16.81	29.61	46.42	37.2	65.51	102.7	—1.21	15.0
Average	3.77	1.40	2.47	3.87	....	....	....	— .10	....

a Discarded. *b* No movement.

TABLE LIX.—*Summary of phosphoric-acid balances for Series II.*

Two men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 7	27.50	12.15		29.08	44.2		105.7	−1.58	
	(36.25)		(21.16)			(58.4)			
No. 10	34.13	13.99		32.19	41.0		94.3	+1.94	
	(42.68)		(22.92)			(53.7)			
Total	61.63	26.14		61.27	42.4		99.4	+ .36	
	(78.93)		(44.08)			(55.8)			
Average	4.40	1.87		4.38				+ .02	
	(4.38)		(2.45)						
Preservative period.									
First subperiod:									
No. 7	15.92	8.11	8.84	16.95	50.9	55.5	106.5	−1.03	4.0
No. 10	9.84	3.11		8.99	31.6		91.4	+ .85	4.0
	(19.53)		(11.05)			(56.6)			
Total	25.76	11.22		25.94	43.6		100.7	− .18	8.0
	(35.45)		(19.89)			(56.1)			
Average	4.29	1.87		4.32				− .03	
	(4.43)		(2.49)						
Second subperiod:									
No. 7	15.14	5.11	9.33	14.44	33.7	61.6	95.4	+0.70	8.0
No. 10	19.30	8.65	12.78	21.43	44.8	66.2	111.0	−2.13	8.0
Total	34.44	13.76	22.11	35.87	40.0	64.2	104.2	−1.43	16.0
Average	4.30	1.72	2.76	4.48				− .18	
Subperiods 1 and 2:									
Total	60.20	24.98		61.81	41.5		102.7	−1.61	24.0
	(69.89)		(42.00)			(60.0)			
Average	4.30	1.78		4.41				− .11	
	(4.37)		(2.62)						
Third subperiod:									
No. 7	15.15	7.10	9.02	16.12	46.9	59.5	106.4	−0.97	12.0
No. 10	19.88	6.10	12.33	18.43	30.7	62.0	92.7	+1.45	12.0
Total	35.03	13.20	21.35	34.55	37.7	60.9	98.6	+ .48	24.0
Average	4.38	1.63	2.67	4.32				+ .06	
Subperiods 1, 2, and 3:									
Total	95.23	38.18		96.36	40.1		101.2	−1.13	48.0
	(104.92)		(63.35)			(60.4)			
Average	4.33	1.74		4.38				− .05	
	(4.37)		(2.64)						

TABLE LIX.—*Summary of phosphoric-acid balances for Series II*—Continued.

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 7	27.50	12.15	...	29.08	44.2	...	105.7	−1.58	...
	(36.25)	...	(21.16)	...	...	(58.4)	...	...	...
No. 10	34.13	13.99	...	32.19	41.0	...	94.3	+1.94	...
	(42.68)	...	(22.92)	...	...	(53.7)	...	...	...
No. 12	31.68	11.25	...	26.52	35.5	...	83.7	+5.16	...
	(40.67)	...	(20.35)	...	...	(50.0)	...	...	...
Total	93.31	37.39	...	87.79	40.1	...	94.1	+5.52	...
	(119.60)	...	(64.43)	...	...	(53.9)	...	...	...
Average	4.44	1.78	...	4.18	...	...	...	+ .26	...
	(4.43)	...	(2.39)	...	...	...	...	...	...
Preservative period.									
First subperiod:									
No. 7	15.92	8.11	8.84	16.95	50.9	55.5	106.5	−1.03	4.0
No. 10	9.84	3.11	...	8.99	31.6	...	91.4	+ .85	4.0
	(19.53)	...	(11.05)	...	...	(56.6)	...	...	
No. 12	19.04	6.69	10.18	16.87	35.1	53.5	88.6	+2.17	4.0
Total	44.80	17.91	...	42.81	40.0	...	95.6	+1.99	12.0
	(54.49)	...	(30.07)	...	...	(55.2)	...	...	
Average	4.48	1.79	...	4.28	...	...	...	+ .20	...
	(4.54)	...	(2.51)	...	...	...	...	...	...
Second subperiod:									
No. 7	15.14	5.11	9.33	14.44	33.7	61.6	95.1	+0.70	8.0
No. 10	19.30	8.65	12.78	21.43	44.8	66.2	111.0	−2.13	8.0
No. 12	15.72	5.01	9.79	14.80	31.9	62.3	94.2	+ .92	8.0
Total	50.16	18.77	31.90	50.67	37.4	63.6	101.0	− .51	24.0
Average	4.18	1.56	2.66	4.22	...	...	...	.04	...
Subperiods 1 and 2:									
Total	94.96	36.68	...	93.48	38.6	...	98.4	+1.48	36.0
	(104.65)	...	(61.97)	...	...	(59.2)	...	...	
Average	4.32	1.67	...	4.25	...	...	...	+ .07	...
	(4.36)	...	(2.58)	...	...	...	...	...	...

TABLE LX.—*Phosphoric-acid balances for Series III.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 18	....	....	....	....	....	....	....	....	....
19	5.02	3.50	2.41	5.91	69.7	48.0	117.7	−0.89	....
20	5.14	2.57	2.54	5.11	50.0	49.4	99.4	+ .03	....
21	4.62	1.39	2.56	3.95	30.1	55.4	85.5	+ .67	....
22	5.26	2.12	2.78	4.90	40.3	52.9	93.2	+ .36	....
23	5.14	2.02	2.64	4.66	39.3	51.4	90.7	+ .48	....
24	5.07	2.14	2.95	5.09	42.2	58.2	100.4	− .02	....
25	5.17	1.41	2.68	4.09	27.3	51.8	79.1	+1.08	....
26	4.35	2.88	2.61	5.49	66.2	60.0	126.2	−1.14	....
27	5.25	4.50	2.62	7.12	85.7	49.9	135.6	−1.87	....
Total	45.02	22.53	23.79	46.32	50.0	52.8	102.9	−1.30	....
Average	5.00	2.50	2.65	5.15	....	....	....	− .15	....
Preservative period.									
First subperiod:									
1903—Feb. 28	5.00	0.858	2.86	3.72	17.2	57.2	74.4	+1.28	1.0
Mar. 1	5.08	3.71	3.09	6.80	73.0	60.8	133.9	−1.72	1.0
2	[4.94]	[2.19]	Lost.	....	[44.3]	....	....	....	1.0
3	5.08	1.81	2.76	4.57	35.6	54.3	90.0	+ .51	1.0
Total	15.16	....	8.71	15.09	....	57.5	99.5	+ .07	4.0
	[20.10]	[8.568]	....	....	[42.6]	....	....	....	
Average	5.05	....	2.90	3.03	....	....	....	+2.02	....
	[5.02]	[2.14]	....	....	....	....	....	....	....
Second subperiod:									
1903—Mar. 4	4.65	1.64	3.00	4.64	35.3	64.5	99.8	+0.01	4.0
5	3.99	2.47	2.74	5.21	61.9	68.7	130.6	−1.22	4.0
6	5.52	1.79	2.91	4.70	32.4	52.7	85.1	+ .82	2.0
7	4.72	1.24	2.98	4.22	26.3	63.1	89.0	+ .50	2.0
Total	18.88	7.14	11.63	18.77	37.8	61.6	99.4	+ .11	12.0
Average	4.72	1.78	2.91	4.69	....	....	....	+ .03	....
Third subperiod:									
1903—Mar. 8	3.80	1.63	3.09	4.72	42.9	81.3	124.2	−0.92	3.0
9	4.67	1.63	2.89	4.52	34.9	61.9	96.8	+ .15	2.0
10	5.78	1.65	2.63	4.28	28.5	45.5	74.0	+1.50	3.0
11	3.75	.71	2.18	2.89	18.9	58.1	77.1	+ .86	2.0
Total	18.00	5.62	10.79	16.41	31.2	59.9	91.2	+1.59	10.0
Average	4.50	1.40	2.70	4.10	....	....	....	+ .40	....
Entire preservative period:									
Total	52.04	....	31.13	50.27	....	59.8	96.6	+1.772	26.0
	[56.98]	[21.328]	....	....	[37.4]	....	....	....	
Average	4.73	....	2.83	4.57	....	....	....	+ .16	....
	[4.75]	[1.78]	....	....	....	....	....	....	....
After period.									
1903—Mar. 12	4.55	2.51	3.03	5.54	55.2	66.6	121.8	−0.99	....
13	5.61	2.28	3.17	5.45	40.6	56.5	97.1	+ .16	....
14	6.03	2.87	2.79	5.66	47.6	46.3	93.9	+ .37	....
15	5.02	1.99	2.85	4.84	39.6	56.8	96.4	+ .18	....
16	4.96	1.67	2.49	4.16	33.7	50.2	83.9	+ .80	....
17	5.23	2.76	2.37	5.13	52.8	45.3	98.1	+ .10	....
18	5.16	2.94	2.22	5.16	57.0	43.0	100.0	± .0	....
19	5.15	2.07	2.10	4.17	40.2	40.8	81.0	+ .98	....
Total	41.71	19.09	21.02	40.11	45.8	50.4	96.2	+1.60	....
Average	5.21	2.38	2.63	5.01	....	....	....	+ .20	....

TABLE LX.—*Phosphoric-acid balances for Series III*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	4.28	1.93	2.50	4.43	45.0	58.5	103.5	−0.15	....
20	4.94	1.73	2.95	4.68	35.0	59.7	94.7	+ .26	....
21	4.59	.998	3.18	4.18	21.8	69.3	91.1	+ .41	....
22	4.82	1.58	3.05	4.63	32.8	63.3	96.1	+ .19	....
23	5.06	1.54	2.73	4.27	30.4	54.0	84.4	+ .79	....
24	4.75	1.01	3.13	4.14	21.3	65.9	87.2	+ .61	....
25	5.06	1.73	2.69	4.42	34.2	53.2	87.4	+ .64	....
26	3.73	2.14	2.67	4.81	57.4	71.6	129.0	−1.08	....
27	5.46	2.14	2.83	4.97	39.2	51.8	91.0	+ .49	....
Total	42.69	14.80	25.73	40.53	34.7	60.2	94.9	+2.16	....
Average	4.74	1.64	2.86	4.50	....	....	....	+ .24	....
Preservative period.									
First subperiod:									
1903—Feb. 28	5.00	2.01	2.75	4.76	40.2	55.0	95.2	+0.24	1.0
Mar. 1	5.01	1.50	3.66	5.16	30.0	73.0	103.0	− .15	1.0
2	[5.07]	[1.31]	....	....	[25.8]	....	....	....	1.0
3	5.01	1.17	3.22	4.39	23.3	64.3	87.6	+ .62	1.0
Total	15.02	....	9.63	14.31	....	64.1	95.3	+ .71	4.0
	[20.09]	[5.99]	....	....	[29.8]	....	....	....	
Average	5.01	....	3.21	4.77	....	....	....	− .24	....
	[5.02]	[1.50]	....	....	....	....	....	....	....
Second subperiod:									
1903—Mar. 4	4.60	1.43	2.71	4.14	31.1	58.9	90.0	+0.46	4.0
5	3.05	.623	2.79	3.41	20.4	91.4	111.8	.36	2.0
6	3.28	(a)	2.82	2.82	....	86.0	86.0	+ .46	0.0
7	3.41	(a)	2.49	2.49	....	73.0	73.0	+ .92	1.0
Total	14.34	2.05	10.81	12.86	14.3	75.4	89.7	+1.48	7.0
Average	3.58	1.02	2.70	3.22	....	....	....	+ .36	....
Third subperiod:									
1903—Mar. 8	1.85	2.18	2.34	4.52	117.8	126.5	244.3	−2.67	0.0
9	3.51	2.26	2.52	4.78	64.4	71.8	136.2	−1.27	0.0
10	4.25	1.12	2.73	3.85	26.4	64.2	90.6	+ .40	0.0
11	4.56	1.65	2.68	4.33	36.2	58.8	95.0	+ .23	0.0
Total	14.17	7.21	10.27	17.48	50.9	72.5	123.4	−3.31	0.0
Average	3.54	1.80	2.57	4.37	....	....	....	....	....
Entire preservative period:									
Total	43.53	....	30.71	44.65	....	70.6	102.6	−1.12	11.0
	[48.60]	[15.25]	....	....	[31.4]	....	....	....	
Average	3.96	....	2.79	4.06	....	....	....	− .10	....
	[4.05]	[1.52]	....	....	....	....	....	....	....
After period.									
1903—Mar. 12	5.10	2.77	2.35	5.12	54.3	46.1	100.4	−0.02	....
13	4.67	2.14	2.46	4.60	45.8	52.7	98.5	+ .07	....
14	5.65	2.49	2.26	4.75	44.1	40.0	84.1	+ .90	....
15	5.07	1.55	2.45	4.00	30.6	48.3	78.9	+1.07	....
16	5.04	2.23	2.78	5.01	44.2	55.2	99.4	+ .03	....
17	5.29	1.62	2.50	4.12	30.6	47.3	77.9	+1.17	....
18	5.14	1.69	2.42	4.11	32.9	47.1	80.0	+1.03	....
19	4.17	.770	2.37	3.14	18.5	56.8	75.3	+1.03	....
Total	40.13	15.26	19.59	34.85	38.0	48.8	86.8	+5.28	....
Average	5.02	1.91	2.45	4.36	....	....	....	+ .66	....

a No movement.

TABLE LX.—*Phosphoric-acid balances for Series III*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid admin-istered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	3.83	1.37	1.84	3.21	35.8	48.0	83.8	+0.62	....
20	3.30	.524	2.48	3.00	15.8	75.1	90.9	+ .30	....
21	[3.45]	[.92]	Lost.	....	[26.7]	....	....	....	....
22	3.99	1.02	2.42	3.44	25.6	60.6	86.2	+ .55	....
23	4.10	1.64	2.87	4.51	40.0	70.0	110.0	− .41	....
24	3.78	.480	2.68	3.16	12.7	70.9	83.6	+ .62	....
25	4.06	1.04	2.43	3.47	25.6	59.9	85.5	+ .59	....
26	3.48	1.21	2.44	3.65	34.8	70.1	104.9	− .17	....
27	3.81	.782	2.28	3.06	20.5	59.8	80.3	+ .75	....
Total	30.35	....	19.44	27.50	....	64.0	90.6	+2.85	....
	[33.80]	[8.986]	....	....	[26.6]	....	....	....	....
Average	3.79	....	2.43	3.44	....	....	....	+ .35	....
	[3.76]	[1.00]	....	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Feb. 28	3.69	0.637	2.29	2.93	17.3	62.1	79.4	+0.76	1.0
Mar. 1	3.94	.887	2.78	3.67	22.5	70.6	93.1	+ .27	1.0
2	(a)	....	....	....	....	....	....	....	1.0
3	3.30	.981	2.59	3.57	29.7	78.5	108.2	− .27	1.0
Total	10.93	2.505	7.66	10.17	22.9	70.1	93.0	+ .76	4.0
Average	3.64	.84	2.55	3.39	....	....	....	+ .25	....
Second subperiod:									
1903—Mar. 4	3.47	1.13	2.41	3.54	32.6	69.4	102.0	−0.07	4.0
5	3.72	.349	2.09	2.44	9.4	56.2	65.6	+1.28	4.0
6	4.02	1.34	2.39	3.73	33.3	59.5	92.8	+ .29	2.0
7	3.30	.794	2.41	3.20	24.0	73.0	97.0	+ .10	2.0
Total	14.51	3.613	9.30	12.91	24.9	64.1	89.0	+1.60	12.0
Average	3.63	.903	2.325	3.23	....	....	....	+ .40	....
Third subperiod:									
1903—Mar. 8	3.67	0.510	2.55	3.06	13.9	69.5	83.4	+0.61	3.0
9	3.14	1.46	2.39	3.85	46.5	76.1	122.6	− .71	3.0
10	3.80	.708	2.30	3.01	18.7	60.5	79.2	+ .79	2.0
11	2.22	.386	2.00	2.39	17.4	90.1	107.6	− .17	3.0
Total	12.83	3.064	9.24	12.30	23.9	72.0	95.9	+ .53	11.0
Average	3.21	.77	2.31	3.08	....	....	....	+ .13	....
Entire preservative period:									
Total	38.27	9.182	26.20	35.38	24.0	68.4	92.4	+2.89	27.0
Average	3.48	.84	2.38	3.22	....	....	....	+ .26	....
After period.									
1903—Mar. 12	3.47	1.26	1.76	3.02	36.3	50.7	87.0	+0.45	....
13	4.27	.585	2.71	3.30	13.8	63.5	77.3	+ .97	....
14	3.99	1.29	2.36	3.65	32.3	59.2	91.5	+ .34	....
15	3.55	.582	1.95	2.53	16.4	54.9	71.3	+1.02	....
16	3.63	.738	1.95	2.68	20.3	53.7	74.0	+ .95	....
17	(4.13)	Lost.	(1.94)	....	....	(47.0)	....	....	....
18	3.22	1.15	1.95	3.10	35.7	60.6	96.3	+ .12	....
19	3.89	1.02	1.61	2.63	26.2	41.4	67.6	+1.26	....
Total	26.02	6.625	....	20.91	25.5	....	80.4	+5.11	....
	(30.15)	....	(16.23)	....	....	(53.8)	....	....	....
Average	3.72	.95	....	2.99	....	....	....	+ .73	....
	(3.77)	....	(2.03)	....	....	....	....	....	....

a Discarded.

TABLE LX.—*Phosphoric-acid balances for Series III*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	Absent.								
20	4.52	1.22	2.26	3.48	27.0	50.0	77.0	+1.04	
21	4.30	.571	2.53	3.10	13.3	58.8	72.1	+1.20	
22	(3.90)	(a)	(2.57)			(65.9)			
23	5.33	.552	3.35	3.90	10.4	62.8	73.2	+1.43	
24	4.79	1.17	2.95	4.12	24.4	61.6	86.0	+ .67	
25	5.07	1.56	2.65	4.21	30.8	52.2	83.0	+ .86	
26	3.80	1.46	2.99	4.45	38.4	78.7	117.1	— .65	
27	5.01	1.29	2.71	4.00	25.7	54.1	79.8	−1.01	
Total	32.82	7.82		27.26	23.9		83.1	+5.56	
	(36.72)		(22.01)			(59.9)			
Average	4.69	1.117		3.89				+ .80	
	(4.53)		(2.75)						
Preservative period.									
First subperiod:									
1903—Feb. 28	3.87	1.23	3.31	4.54	31.7	85.6	117.3	−0.67	1.0
Mar. 1	4.22	1.86	3.41	5.27	44.1	80.8	124.9	−1.05	1.0
2	[4.50]	[.972]	Lost.		[21.6]				1.0
3	5.18	1.31	3.49	4.80	25.3	67.4	92.7	+ .38	1.0
Total	13.27		10.21	14.61		76.9	110.1	−1.34	4.0
	[17.77]	[5.372]			[30.2]				
Average	4.42		3.40	4.87				— .45	
	[4.44]	[1.343]							
Second subperiod:									
1903—Mar. 4	4.04	1.07	2.83	3.90	26.4	70.1	96.5	+0.14	4.0
5	4.01	1.29	2.78	4.07	32.2	69.3	101.5	— .06	4.0
6	3.87	.621	3.20	3.82	16.0	82.7	98.7	+ .05	2.0
7	2.55	.997	2.65	3.65	39.1	103.9	143.1	−1.10	2.0
Total	14.47	3.978	11.46	15.44	27.5	79.2	106.7	— .97	12.0
Average	3.62	.994	2.86	3.86				— .24	
Third subperiod:									
1903—Mar. 8	3.02	0.887	2.07	2.96	29.4	68.6	98.0	+0.06	3.0
9	2.53	.693	2.07	2.76	27.4	81.7	109.1	— .23	1.7
10	3.65	1.25	2.40	3.65	31.2	65.8	100.0	.00	3.0
11	1.52	1.07	1.84	2.91	70.4	121.0	191.4	−1.39	2.0
Total	10.72	3.900	8.38	12.28	36.4	78.2	114.6	−1.56	9.7
Average	2.68	.975	2.09	3.07				— .39	
Entire preservative period:									
Total	38.46		30.05	42.33		78.2	110.1	−3.87	25.7
	[42.96]	[13.250]			[30.8]				
Average	3.49		2.73	3.85				— .36	
	[3.58]	[1.101]							
After period.									
1903—Mar. 12	(3.27)	Lost.	(2.26)			(69.1)			
13	(3.81)	Lost.	(1.87)			(49.1)			
14	4.71	(b)	2.02	2.02		12.9	12.9	+2.69	
15	3.51	1.58	1.63	3.21	15.0	16.5	91.5	+ .30	
16	[4.02]	[1.18]	Lost.		[29.3]				
17	4.14	.910	1.92	2.83	22.0	46.4	68.4	+1.31	
18	3.60	1.05	1.92	2.97	29.2	53.3	82.5	+ .63	
19	(4.31)	(a)	(1.98)			(45.9)			
Total	15.96			11.03			69.1	+4.93	
	(27.35)		(13.60)			(49.7)			
	[19.98]	[4.72]			[23.6]				
Average	3.99			2.76				+1.23	
	(3.91)		(1.94)						
	[4.00]	[1.18]							

a Discarded. *b* No movement.

TABLE LX.—*Phosphoric-acid balances for Series III*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	4.91	0.901	2.74	3.64	18.4	55.8	74.1	+1.27	....
20	5.22	.531	3.31	3.84	10.2	63.4	73.6	+1.38	....
21	5.14	.821	3.47	4.09	12.1	67.5	79.6	+1.05	....
22	5.57	3.91	3.27	7.18	70.2	58.7	128.9	−1.61	....
23	5.02	2.12	3.02	5.14	42.2	60.2	102.4	− .12	....
24	5.52	.970	3.70	4.67	17.6	67.0	84.6	+ .85	....
25	5.43	1.55	3.55	5.10	28.5	65.4	93.9	+ .33	....
26	4.87	3.56	3.47	7.03	73.1	71.3	144.4	−2.16	....
27	5.66	.544	3.15	3.69	9.6	55.6	65.2	+1.97	....
Total	47.34	14.707	29.68	44.38	31.1	62.7	93.7	+2.96	....
Average	5.26	1.63	3.30	4.93	....	....	....	+ .23	....
Preservative period.									
First subperiod:									
1903—Feb. 28	5.32	3.08	3.11	6.19	57.9	58.5	116.4	−0.87	1.0
Mar. 1	5.40	.213	3.23	3.443	39.4	59.8	63.8	+1.957	1.0
2	[5.33]	[1.38]	Lost.	....	[25.9]	....	....	....	1.0
3	4.89	3.09	3.57	6.66	63.2	73.0	136.2	−1.77	1.0
Total	15.61	....	9.91	16.293	....	63.5	104.4	− .683	4.0
	[20.94]	[7.76]	....	....	[37.1]	....	....	....	
Average	5.20	....	3.30	5.428	....	....	....	− .228	....
	[5.24]	[1.94]	....	....	....	....	....	....	....
Second subperiod:									
1903—Mar. 4	4.89	1.73	3.28	5.01	35.4	67.1	102.5	−0.12	4.0
5	4.93	1.26	3.15	4.41	25.6	63.9	89.5	+ .52	4.0
6	6.01	2.25	3.36	5.61	37.4	55.9	93.3	+ .40	2.0
7	4.43	1.17	3.56	4.73	26.4	80.4	106.8	− .30	2.0
Total	20.26	6.41	13.35	19.76	31.6	65.9	97.5	+ .50	12.0
Average	5.06	1.60	3.34	4.94	....	....	....	+ .12	....
Third subperiod:									
1903—Mar. 8	4.19	0.960	3.25	4.21	22.9	77.6	100.5	−0.02	3.0
9	3.48	.317	3.03	3.35	9.1	87.1	96.3	+ .13	3.0
10	3.47	.656	2.40	3.06	18.9	69.2	88.2	+ .41	2.2
11	2.80	.264	2.38	2.64	9.4	85.0	94.3	+ .16	3.0
Total	13.94	2.197	11.06	13.26	15.8	79.3	95.1	+ .68	11.2
Average	3.48	.55	2.76	3.32	....	....	....	+ .17	....
Entire preservative period:									
Total	49.81	....	34.32	51.23	....	68.9	102.8	−1.42	27.2
	[55.14]	[18.287]	....	....	[33.1]	....	....	....	
Average	4.53	....	3.12	4.66	....	....	....	− .13	....
	[4.60]	[1.52]	....	....	....	....	....	....	....
After period.									
1903—Mar. 12	4.29	2.44	3.44	5.88	56.9	80.2	137.1	−1.59	....
13	4.72	1.65	2.96	4.61	35.0	62.7	97.7	+ .11	....
14	6.11	2.27	3.37	5.64	37.1	55.2	92.3	+ .47	....
15	5.59	(a)	3.16	3.16	....	56.5	56.5	+2.43	....
16	5.41	1.84	2.74	4.58	34.0	50.7	84.7	+ .83	....
17	5.64	2.54	2.61	5.15	45.0	46.3	91.3	+ .49	....
18	5.27	.486	2.62	3.11	9.2	49.7	59.0	+2.16	....
19	5.79	1.72	2.89	4.61	29.7	49.9	79.6	+1.18	....
Total	42.82	12.946	23.79	36.74	30.2	55.6	85.8	+6.08	....
Average	5.35	1.62	2.97	4.59	....	....	....	+ .76	....

a No movement.

TABLE LX.—*Phosphoric acid balances for Series III*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	3.31	(a)	1.54	1.54		46.5	46.5	+1.77	
20	3.15	0.358	2.08	2.44	11.4	66.0	77.4	+ .71	
21	3.00	2.64	1.94	4.58	88.0	64.7	152.7	−1.58	
22	3.39	1.23	1.88	3.11	36.3	55.4	91.7	+ .28	
23	4.13	(a)	2.06	2.06		49.9	49.9	+2.07	
24	4.68	.983	2.68	3.66	21.0	57.2	78.2	+1.02	
25	4.55	1.19	2.70	3.89	26.2	59.3	85.5	+ .66	
26	3.54	1.64	2.34	3.98	46.3	66.1	112.4	− .44	
27	4.18	(a)	2.09	2.09		50.0	50.0	+2.09	
Total	33.93	8.041	19.31	27.35	23.7	56.9	80.6	+6.58	
Average	3.77	.89	2.15	3.04				+ .73	
Preservative period.									
First subperiod:									
1903—Feb. 28	3.23	2.34	1.99	4.33	72.5	61.6	134.1	−1.10	1.0
Mar. 1	2.78	2.40	2.51	4.91	86.3	90.3	176.6	−2.13	.0
2	[4.55]	[2.11]	Lost.		[46.4]				.0
3	4.72	.874	2.74	3.61	18.5	58.0	76.5	+1.11	.0
Total	10.73		7.24	12.85		67.5	119.8	−2.12	1.0
	[15.28]	[7.72]			[50.5]				
Average	3.58		2.41	4.28				− .70	
	[3.82]	[1.93]							
Second subperiod:									
1903—Mar. 4	3.43	1.77	2.99	4.76	51.6	87.2	138.8	−1.33	0.0
5	3.78	2.45	2.56	5.01	64.8	67.7	132.5	−1.23	.0
6	4.67	1.40	2.34	3.74	30.0	50.1	80.1	+ .93	1.0
7	4.23	1.54	2.67	4.21	37.0	63.0	100.0	+ .02	2.0
Total	16.11	7.16	10.56	17.72	44.5	65.5	110.0	−1.61	3.0
Average	4.03	1.79	2.64	4.43				− .40	
Third subperiod:									
1903—Mar. 8	4.24	1.11	2.07	3.18	26.2	48.8	75.0	+1.06	3.0
9	3.25	.899	2.61	3.51	27.7	80.3	108.0	− .26	3.0
10	4.15	(a)	2.21	2.21		49.7	49.7	+2.24	3.0
11	3.65	1.22	2.21	3.43	33.4	60.6	94.0	+ .22	3.0
Total	15.59	3.23	9.10	12.33	20.7	58.4	79.1	+3.26	12.0
Average	3.90	.80	2.28	3.08				+ .82	
Entire preservative period:									
Total	42.43		26.90	12.90		63.4	101.1	−0.47	16.0
	[46.98]	[18.11]			[38.6]				
Average	3.86		2.45	3.90				− .04	
	[3.92]	[1.51]							
After period.									
1903—Mar. 12	4.44	1.60	2.61	4.21	36.0	58.8	94.8	+0.23	
13	3.72	1.70	2.36	4.06	45.7	63.4	109.1	− .34	
14	1.89	.655	2.27	2.92	13.4	46.3	59.7	+1.97	
15	4.71	1.53	2.57	4.10	32.5	54.5	87.0	+ .61	
16	3.89	1.59	1.71	3.30	40.9	43.9	81.8	+ .59	
17	4.58	1.61	1.87	3.48	35.2	40.8	76.0	+1.10	
18	3.62	2.74	1.69	4.43	75.7	46.7	122.4	− .81	
19	(4.30)	Lost.	(2.28)			(53.0)			
Total	29.85	11.425		26.50	38.3		88.8	+3.35	
	(34.15)		(17.36)			(50.8)			
Average	4.26	1.63		3.78				+ .48	
	(4.27)		(2.17)						

[a] No movement.

TABLE LXI.—*Summary of phosphoric-acid balances for Series III.*

Four men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	45.02	22.53	23.79	46.32	50.0	52.8	102.9	− 1.30	......
No. 3	30.35	......	19.44	27.50	......	64.0	90.6	+ 2.85	......
	[33.80]	[8.986]	......	......	[26.6]	......	......	......	......
No. 4	32.82	7.82	......	27.26	23.9	......	83.1	+ 5.56	......
	(36.72)	......	(22.01)	......	......	(59.9)	......	......	......
No. 5	47.34	14.707	29.68	44.39	31.1	62.7	93.7	+ 2.95	......
Total	155.53	......	......	145.47	......	......	93.5	+10.06	......
	(159.43)	......	(94.92)	......	......	(59.5)	......	......	......
	[158.98]	[54.043]	......	......	[34.0]	......	......	......	......
Average	4.71	......	......	4.40	......	......	......	+ .31	......
	(4.69)	......	(2.79)	......	......	......	......	......	......
	[4.68]	[1.59]	......	......	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 1	15.16	......	8.71	15.09	......	57.0	99.5	+ 0.07	4.0
	[20.10]	[8.568]	......	......	[42.6]	......	......	......	
No. 3	10.93	2.505	7.66	10.16	22.9	70.1	93.0	+ .77	4.0
No. 4	13.27	......	10.21	14.61	......	76.9	110.1	− 1.34	4.0
	[17.77]	[5.372]	......	......	[30.2]	......	......	......	
No. 5	15.61	......	9.91	18.21	......	63.5	116.7	− 2.60	4.0
	[20.94]	[9.68]	......	......	[46.2]	......	......	......	
Total	54.97	......	36.49	58.07	......	66.4	105.6	− 3.10	16.0
	[69.74]	[26.125]	......	......	[37.5]	......	......	......	
Average	4.58	......	3.04	4.84	......	......	......	− .26	......
	[4.65]	[1.74]	......	......	......	......	......	......	......
Second subperiod:									
No. 1	18.88	7.14	11.63	18.77	37.8	61.6	99.4	+ 0.11	12.0
No. 3	14.51	3.613	9.30	12.91	24.9	64.1	89.0	+ 1.60	12.0
No. 4	14.47	3.978	11.46	15.44	27.5	79.2	106.7	− .97	12.0
No. 5	20.26	6.41	13.35	19.76	31.6	65.9	97.5	+ .50	12.0
Total	68.12	21.141	45.74	66.88	31.0	67.2	98.2	+ 1.24	48.0
Average	4.26	1.32	2.86	4.18	......	......	......	+ .08	
Third subperiod:									
No. 1	18.00	5.62	10.79	16.41	31.2	59.9	91.2	+ 1.59	10.0
No. 3	12.83	3.064	9.24	12.30	23.9	72.0	95.9	+ .53	11.0
No. 4	10.72	3.900	8.38	12.28	36.4	78.2	114.6	− 1.56	9.7
No. 5	13.94	2.197	11.06	13.26	15.8	79.3	95.1	+ .68	11.2
Total	55.49	14.781	39.47	54.25	26.6	71.1	97.7	+ 1.24	41.9
Average	3.47	.92	2.47	3.39	......	......	......	+ .08	......
Entire preservative period:									
No. 1	52.04	......	31.13	50.27	......	59.8	96.6	+ 1.772	26.0
	[56.98]	[21.328]	......	......	[37.4]	......	......	......	
No. 3	38.27	9.182	26.20	35.38	24.0	68.5	92.5	+ 2.88	27.0
No. 4	38.46	......	30.05	42.33	......	78.2	110.1	− 3.87	25.7
	[42.96]	[13.250]	......	......	[30.8]	......	......	......	
No. 5	49.81	......	34.32	51.23	......	68.9	102.8	− 1.42	27.2
	[55.14]	[18.287]	......	......	[33.1]	......	......	......	
Total	178.58	......	121.70	179.21	......	68.2	100.4	− .63	105.9
	[193.35]	[62.047]	......	......	[32.1]	......	......	......	
Average	4.05	......	2.77	4.07	......	......	......	− .02	......
	[4.11]	[1.32]	......	......	......	......	......	......	......
After period.									
No. 1	41.71	19.09	21.02	40.11	45.8	50.4	96.2	+ 1.60	......
No. 3	26.02	6.625	......	20.91	25.5	......	80.4	+ 5.11	......
	(30.15)	......	(16.23)	......	......	(53.8)	......	......	......
No. 4	15.96	......	......	11.03	......	......	69.1	+ 4.93	......
	(27.35)	......	(13.60)	......	......	(49.7)	......	......	......
	[19.98]	[4.72]	......	......	[23.6]	......	......	......	......
No. 5	42.82	12.946	23.79	36.74	30.2	55.6	85.8	+ 6.08	......
Total	126.51	......	......	108.79	......	......	86.0	+17.72	......
	(142.03)	......	(74.64)	......	......	(52.6)	......	......	......
	[130.53]	[43.381]	......	......	[33.2]	......	......	......	......
Average	4.68	......	......	4.03	......	......	......	+ .65	......
	(4.58)	......	(2.41)	......	......	......	......	......	......
	[4.66]	[1.55]	......	......	......	......	......	......	......

TABLE LXI.—*Summary of phosphoric-acid balances for Series III*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	45.02	22.53	23.79	46.32	50.0	52.8	102.9	− 1.30	......
No. 2	42.69	14.80	25.73	40.53	34.7	60.2	94.9	+ 2.16	......
No. 3	30.35	......	19.44	27.50	......	64.0	90.6	+ 2.85	......
	[33.80]	[8.986]	......	......	[26.6]	......	......	......	......
No. 4	32.82	7.82	......	27.26	23.9	......	83.1	+ 5.56	......
	(36.72)	......	(22.01)	......	......	(59.9)	......	......	......
No. 5	47.34	14.707	29.68	44.38	31.1	62.7	93.7	+ 2.96	......
Total	198.22	......	......	185.99	......	......	93.8	+12.23	......
	(202.12)	......	(120.65)	......	......	(59.7)	......	......	......
	[201.67]	[68.843]	......	......	[34.1]	......	......	......	......
Average	4.72	......	......	4.43	......	......	......	+ .29	......
	(4.70)	......	(2.81)	......	......	......	......	......	......
	[4.69]	[1.60]	......	......	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 1	15.16	......	8.71	15.09	......	57.5	99.5	+ 0.07	4.0
	[20.10]	[8.568]	......	......	[42.6]	......	......	......	
No. 2	15.02	......	9.63	14.31	......	64.1	95.3	+ .71	4.0
	[20.09]	[5.99]	......	......	[29.8]	......	......	......	
No. 3	10.93	2.505	7.66	10.17	22.9	70.1	93.0	+ .76	4.0
No. 4	13.27	......	10.21	14.61	......	76.9	110.1	− 1.34	4.0
	[17.77]	[5.372]	......	......	[30.2]	......	......	......	
No. 5	15.61	......	9.91	18.21	......	63.5	116.7	− 2.60	4.0
	[20.94]	[9.68]	......	......	[46.2]	......	......	......	
Total	69.99	......	46.12	72.39	......	65.9	103.4	− 2.40	20.0
	[89.83]	[32.115]	......	......	[35.8]	......	......	......	
Average	1.67	......	3.08	4.83	......	......	......	− .16	......
	[1.73]	[1.69]	......	......	......	......	......	......	......
Second subperiod:									
No. 1	18.88	7.14	11.63	18.77	37.8	61.6	99.4	+ 0.11	12.0
No. 2	14.34	2.05	10.81	12.86	14.3	75.4	89.7	+ 1.48	7.0
No. 3	14.51	3.613	9.30	12.91	24.9	64.1	89.0	+ 1.60	12.0
No. 4	14.47	3.978	11.46	15.44	27.5	79.2	106.7	− .97	12.0
No. 5	20.26	6.41	13.35	19.76	31.6	65.9	97.5	.50	12.0
Total	82.16	23.191	56.55	79.71	28.1	68.6	96.7	+ 2.72	55.0
Average	4.12	1.16	2.83	3.99	......	......	......	+ .13	......
Third subperiod:									
No. 1	18.00	5.62	10.79	16.41	31.2	59.9	91.2	+ 1.59	10.0
No. 2	14.17	7.21	10.27	17.48	50.9	72.5	123.4	3.31	.0
No. 3	12.83	3.061	9.21	12.30	23.9	72.0	95.9	+ .52	11.0
No. 4	10.72	3.900	8.38	12.28	36.4	78.2	111.6	− 1.56	9.7
No. 5	13.94	2.197	11.06	13.26	15.8	79.3	95.1	.68	11.2
Total	69.66	21.991	49.71	71.73	31.6	71.4	103.0	− 2.07	41.9
Average	3.48	1.10	2.49	3.59	......	......	......	.11	......
Entire preservative period:									
No. 1	52.01	......	31.13	50.27	......	59.8	96.6	+ 1.772	26.0
	[56.98]	[21.328]	......	......	[37.4]	......	......	......	
No. 2	43.53	......	30.71	41.65	......	70.6	102.6	.112	11.0
	[48.60]	[15.25]	......	......	[31.4]	......	......	......	
No. 3	38.27	9.182	26.20	35.39	24.0	68.5	92.5	+ 2.88	27.0
No. 4	38.46	......	30.05	42.33	......	78.2	110.1	− 3.87	25.7
	[42.96]	[13.250]	......	......	[30.8]	......	......	......	
No. 5	49.81	......	34.32	51.23	......	68.9	102.8	1.42	27.2
	[55.14]	[18.287]	......	......	[33.1]	......	......	......	
Total	222.11	......	152.41	223.87	......	68.6	100.8	1.76	116.9
	[241.95]	[77.297]	......	......	[31.9]	......	......	......	
Average	4.04	......	2.77	4.07	......	......	......	.03	......
	[4.40]	[1.310]	......	......	......	......	......	......	......

TABLE LXII.—*Phosphoric-acid balances for Series IV.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	2.83	1.45	1.12	2.57	51.2	39.6	90.8	+0.26	....
21	4.33	2.26	2.06	4.32	52.2	47.6	99.8	+ .01	....
22	3.73	1.81	1.70	3.51	48.5	45.6	94.1	+ .22	....
23	3.66	1.44	1.92	3.36	39.3	52.5	91.8	+ .30	....
24	2.81	1.62	1.57	3.19	57.6	55.9	113.5	− .38	....
25	3.55	1.25	1.62	2.87	35.2	45.6	80.8	+ .68	....
26	3.59	2.97	2.18	5.15	82.7	60.7	143.5	−1.56	....
27	4.49	.944	1.83	2.77	21.0	40.7	61.7	+1.72	....
Total	28.99	13.744	14.00	27.74	47.4	48.3	95.7	+1.25	....
Average	3.62	1.718	1.75	3.47	....	....	....	+ .15	....
Preservative period.									
First subperiod:									
1903—Mar. 28	3.66	2.03	2.10	4.13	55.5	57.4	112.8	−0.47	0.5
29	3.94	2.92	1.81	4.73	74.1	45.9	120.1	− .79	.5
30	3.50	2.10	2.04	4.14	60.0	58.3	118.3	− .64	.5
31	3.97	1.59	2.06	3.65	40.0	51.9	91.9	+ .32	.5
Total	15.07	8.64	8.01	16.65	57.3	53.2	110.5	−1.58	2.0
Average	3.77	2.16	2.00	4.16	....	....	....	− .39	....
Second subperiod:									
1903—Apr. 1	3.46	(*a*)	1.09	1.09	....	31.5	31.5	+2.37	1.0
2	Dropped.	....	....	....	....	....	....	....	....

[a] No movement.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.									
1903—Mar. 20	4.95	0.405	2.71	3.11	8.2	54.7	62.8	+ 1.84	....
21	5.16	1.59	2.40	3.99	30.8	46.5	77.3	+ 1.17	....
22	5.01	.935	2.64	3.58	18.7	52.7	71.5	+ 1.43	....
23	(4.47)	Lost.	(2.28)	....	....	(51.0)	....	....	....
24	4.19	(*a*)	2.61	2.61	....	62.3	62.3	+ 1.58	....
25	4.40	2.65	3.56	6.21	60.2	80.9	141.1	− 1.81	....
26	4.78	2.04	3.03	5.07	42.7	63.4	106.1	− .29	....
27	5.54	(*a*)	3.46	3.46	....	62.5	62.5	+ 2.08	....
Total	34.03	7.62	....	28.03	22.4	....	82.4	+ 6.00	....
	(38.50)	....	(22.69)	....	....	(58.9)	....	....	....
Average	4.86	1.09	....	4.00	....	....	....	+ .86	....
	(4.81)	....	(2.84)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Mar. 28	4.78	1.39	2.47	3.86	29.1	51.7	80.8	+ 0.92	0.5
29	5.07	2.81	3.07	5.88	55.4	60.6	116.0	− .81	.5
30	4.45	2.57	3.17	5.74	57.8	71.2	129.0	− 1.29	.5
31	4.93	1.89	3.19	5.08	38.3	64.7	103.0	− .15	.5
Total	19.23	8.66	11.90	20.56	45.0	61.9	106.9	− 1.33	2.0
Average	4.81	2.16	2.98	5.14	....	....	....	− .33	....
Second subperiod:									
1903—Apr. 1	4.78	(*a*)	2.92	2.92	....	61.1	61.1	+ 1.86	1.0
2	4.65	2.60	2.53	5.13	55.9	54.4	110.3	− .48	1.0
3	5.27	1.19	3.05	4.24	22.6	57.9	80.5	+ 1.03	1.0
4	4.76	2.53	2.92	5.45	53.2	61.4	114.5	− .69	1.0
Total	19.46	6.32	11.42	17.74	32.5	58.7	91.2	+ 1.72	4.0
Average	4.86	1.58	2.86	4.44	....	....	....	+ .42	....
Subperiods 1 and 2:									
Total	38.69	14.98	23.32	38.30	38.7	60.3	99.0	+ 0.39	6.0
Average	4.84	1.87	2.92	4.79	....	....	....	+ .05	....

TABLE LXII.—*Phosphoric-acid balances for Series IV*—Continued.

No. 8—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Third subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 5	4.94	(*a*)	2.90	2.90	....	58.7	58.7	+ 2.04	1.0
6	4.97	1.50	3.25	4.75	30.2	65.4	95.6	+ .22	1.0
7	4.95	2.59	3.41	6.00	52.3	68.9	121.2	− 1.05	1.0
8	4.83	2.07	2.95	5.02	42.7	61.1	103.9	− .19	1.0
9	4.59	1.46	2.82	4.28	31.8	61.4	93.2	+ .31	1.0
Total	24.28	7.62	15.33	22.95	31.4	63.1	94.5	+ 1.33	5.0
Average	4.86	1.52	3.07	4.59	....	....	....	+ .27	....
Subperiods 1, 2, and 3:									
Total	62.97	22.60	38.65	61.25	35.9	61.4	97.3	+ 1.72	11.0
Average	4.84	1.74	2.97	4.71	....	....	....	+ .13	....
Fourth subperiod:									
1903—Apr. 10	5.24	1.23	2.77	4.00	23.5	52.9	76.3	+ 1.24	2.0
11	4.57	1.37	3.34	4.71	30.0	73.1	103.1	− .14	2.0
12	4.71	2.40	3.12	5.52	51.0	66.2	117.2	− .81	2.0
13	4.62	.955	2.21	3.17	20.7	47.8	68.6	+ 1.45	2.0
14	4.64	1.36	2.64	4.00	29.3	56.9	86.2	+ .64	3.0
Total	23.78	7.315	14.08	21.40	30.8	59.2	90.0	+ 2.38	11.0
Average	4.76	1.463	2.82	4.28	....	....	....	+ .48	....
Entire preservative period:									
Total	86.75	29.915	52.73	82.65	34.5	60.8	95.3	+ 4.10	22.0
Average	4.82	1.66	2.93	4.59	....	....	....	+ .23	....
After period.									
1903—Apr. 15	4.22	1.06	2.76	3.82	25.1	65.4	90.5	+ 0.40	....
16	4.51	1.29	2.45	3.74	28.6	54.3	82.9	+ .77	....
17	5.49	1.22	2.86	4.08	22.2	52.1	74.3	+ 1.41	....
18	4.40	.914	2.53	3.44	20.8	57.5	78.2	+ .96	....
19	4.44	2.00	2.72	4.72	45.0	61.3	106.3	− .28	....
20	4.23	2.35	2.48	4.83	55.6	58.6	114.2	− .60	....
21	4.42	(*a*)	3.09	3.09	....	69.9	69.9	+ 1.33	....
22	4.02	2.41	2.62	5.03	59.9	65.2	125.1	− 1.01	....
Total	35.73	11.244	21.51	32.75	31.5	60.2	91.7	+ 2.98	....
Average	4.47	1.406	2.69	4.09	....	....	....	+ .38	....

a No movement.

No. 9.

Period and date.	1	2	3	4	5	6	7	8	9
Fore period.									
1903—Mar. 20	5.06	1.99	2.38	4.37	39.3	47.1	86.4	+ 0.69	....
21	6.23	1.28	2.76	4.04	20.5	44.3	64.8	+ 2.19	....
22	5.76	2.68	2.82	5.50	46.5	49.0	95.5	+ .26	....
23	5.01	2.29	2.99	5.28	45.7	59.7	105.4	− .27	....
24	4.26	1.68	3.10	4.78	39.4	72.8	112.2	.52	....
25	5.02	1.82	3.19	5.01	36.3	63.5	99.8	+ .01	....
26	4.78	2.06	2.89	4.95	43.1	60.5	103.6	.17	....
27	5.82	1.16	3.19	4.35	19.9	54.8	74.7	+ 1.47	....
Total	41.91	14.96	23.32	38.28	35.7	55.6	91.3	+ 3.66	....
Average	5.24	1.87	2.92	4.79	....	....	....	+ .45	....
Preservative period.									
First subperiod.									
1903—Mar. 28	4.80	2.07	3.04	5.11	43.1	63.4	106.5	0.31	0.5
29	5.19	2.38	2.73	5.11	45.9	52.6	98.5	+ .08	.5
30	4.84	1.99	2.87	4.86	41.1	59.3	100.4	.02	.5
31	5.14	1.82	3.08	4.90	35.4	59.9	95.3	+ .24	.5
Total	19.97	8.26	11.72	19.98	41.4	58.7	100.1	− .01	2.0
Average	4.99	2.07	2.93	5.00	....	....	....	.01	....

TABLE LXII.—*Phosphoric-acid balances for Series IV*—Continued.

No. 9—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Second subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 1	4.98	1.91	2.91	4.82	38.4	58.4	96.8	+ 0.16	1.0
2	4.82	(a)	2.83	2.83	......	58.7	58.7	+ 1.99	1.0
3	5.64	3.49	3.26	6.75	61.9	57.8	119.7	− 1.11	1.0
4	5.01	(a)	2.93	2.93	......	58.5	58.5	+ 2.08	1.0
Total	20.45	5.40	11.93	17.33	26.4	58.3	84.7	+ 3.12	4.0
Average	5.11	1.35	2.98	4.33	......	......	......	+ .78	......
Subperiods 1 and 2:									
Total	40.42	13.66	23.65	37.31	33.8	58.5	92.3	+ 3.11	6.0
Average	5.05	1.71	2.95	4.66	......	......	......	+ .39	......
Third subperiod:									
1903—Apr. 5	5.20	1.86	3.28	5.14	35.7	63.1	98.8	+ 0.06	1.0
6	5.15	2.68	3.17	5.85	52.0	61.6	113.6	− .70	1.0
7	5.09	1.74	3.14	4.88	34.2	61.7	95.9	+ .21	1.0
8	4.95	2.98	3.20	6.18	60.2	64.6	124.8	− 1.23	1.0
9	4.70	.842	3.55	4.39	17.9	75.5	93.4	+ .31	1.0
Total	25.09	10.10	16.34	26.44	40.3	65.1	105.4	− 1.35	5.0
Average	5.02	2.02	3.27	5.29	......	......	......	− .27	......
Subperiods 1, 2, and 3:									
Total	65.51	23.76	39.99	63.75	36.3	61.0	97.3	+ 1.76	11.0
Average	5.04	1.83	3.07	4.90	......	......	......	+ .14	......
Fourth subperiod:									
1903—Apr. 10	5.56	1.70	3.54	5.24	30.6	63.6	94.2	+ 0.32	2.0
11	4.66	2.79	3.49	6.28	59.9	74.9	134.8	− 1.62	2.0
12	4.92	1.75	3.25	5.00	35.6	66.0	101.6	− .08	2.0
13	4.72	1.25	2.51	3.76	26.5	53.2	79.7	+ .96	2.0
14	4.88	1.37	3.21	4.58	28.1	65.8	93.9	+ .30	3.0
Total	24.74	8.86	16.00	24.86	35.8	64.7	100.5	− .12	11.0
Average	4.95	1.77	3.20	4.97	......	......	......	− .02	......
Entire preservative period:									
Total	90.25	32.62	55.99	88.61	36.2	62.0	98.2	+ 1.64	22.0
Average	5.02	1.81	3.11	4.92	......	......	......	+ .10	......
After period.									
1903—Apr. 15	4.48	1.24	3.55	4.79	27.7	79.2	106.9	− 0.31	......
16	4.47	1.77	2.51	4.28	39.6	56.1	95.7	+ .19	......
17	5.57	1.96	2.98	4.94	35.2	53.5	88.7	+ .63	......
18	4.72	2.19	2.67	4.86	46.4	56.6	103.0	− .14	......
19	4.84	1.65	2.39	4.04	34.1	49.4	83.5	+ .80	......
20	5.04	1.70	3.11	4.81	33.7	61.7	95.4	+ .23	......
21	4.67	.530	2.97	3.50	11.3	63.6	74.9	+ 1.17	......
22	4.34	1.23	3.04	4.27	28.3	70.1	98.4	+ .07	......
Total	38.13	12.27	23.22	35.49	32.2	60.9	93.1	+ 2.64	......
Average	4.77	1.54	2.90	4.44	......	......	......	+ .33	......

No. 10.

Period and date.	1	2	3	4	5	6	7	8	9
Fore period.									
1903—Mar. 20	4.48	1.38	2.43	3.81	30.8	54.2	85.0	+0.67	......
21	5.56	1.71	2.44	4.15	30.7	43.9	74.6	+1.41	......
22	4.19	.905	2.82	3.72	21.5	67.3	88.8	+ .47	......
23	3.20	1.04	2.09	3.13	32.5	65.3	97.8	+ .07	......
24	3.53	1.46	2.79	4.25	41.4	79.0	120.4	− .72	......
25	4.67	1.95	3.21	5.16	41.8	68.7	110.5	− .49	......
26	4.82	2.11	3.00	5.11	43.8	62.2	106.0	− .29	......
27	5.57	2.07	2.67	4.74	37.2	47.9	85.1	+ .83	......
Total	36.02	12.625	21.45	34.07	35.0	59.6	94.6	+1.95	......
Average	4.50	1.58	2.68	4.26	......	......	......	+ .24	......

[a] No movement.

TABLE LXII.—*Phosphoric-acid balances for Series IV*—Continued.

No. 10—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period.									
First subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 28	4.68	2.75	2.95	5.70	58.8	63.0	121.8	−1.02	0.5
29	5.05	2.60	2.64	5.24	51.5	52.3	103.8	− .19	.5
30	4.42	1.31	2.61	3.92	29.6	59.1	88.7	+ .50	.5
31	4.93	2.91	2.85	5.76	59.0	57.8	116.8	− .83	.5
Total	19.08	9.57	11.05	20.62	50.2	57.9	108.1	−1.54	2.0
Average	4.77	2.39	2.76	5.15	....	....	....	− .38	....
Second subperiod:									
1903—Apr. 1	4.73	1.46	2.55	4.01	30.9	53.9	84.8	+0.72	1.0
2	4.61	2.51	1.75	4.26	54.4	38.0	92.4	+ .35	1.0
3	5.38	1.69	4.04	5.73	31.4	75.1	106.5	− .35	1.0
4	4.70	1.28	2.49	3.77	27.2	53.0	80.2	+ .93	1.0
Total	19.42	6.94	10.83	17.77	35.7	55.8	91.5	+1.65	4.0
Average	4.86	1.74	2.71	4.45	....	....	....	+ .41	....
Subperiods 1 and 2:									
Total	38.50	16.51	21.88	38.39	42.9	56.8	99.7	+0.11	6.0
Average	4.81	2.06	2.74	4.80	....	....	....	+ .01	....
Third subperiod:									
1903—Apr. 5	4.95	1.54	2.91	4.45	31.1	58.8	89.9	+0.50	1.0
6	4.78	1.75	2.63	4.38	36.6	55.0	91.6	+ .40	1.0
7	4.86	2.01	3.11	5.12	41.3	64.0	105.3	− .26	1.0
8	4.67	2.16	2.98	5.14	46.3	63.8	110.1	− .47	1.0
9	4.48	1.79	2.83	4.62	39.9	63.2	103.1	− .14	1.0
Total	23.74	9.25	14.46	23.71	39.0	60.9	99.9	+ .03	5.0
Average	4.75	1.85	2.89	4.74	....	....	....	+ .01	....
Subperiods 1, 2, and 3:									
Total	62.24	25.76	36.34	62.10	41.4	58.4	99.8	+0.14	11.0
Average	4.79	1.98	2.80	4.78	....	....	....	+ .01	....
Fourth subperiod:									
1903—Apr. 10	5.18	0.526	2.63	3.16	10.2	50.8	61.0	+2.02	2.0
11	4.48	3.61	3.62	7.23	80.6	80.8	161.4	−2.75	2.0
12	4.52	1.69	3.28	4.97	37.4	72.6	110.0	− .45	2.0
13	4.33	.705	2.93	3.64	16.4	67.7	84.1	+ .69	2.0
14	5.78	2.68	2.63	5.31	46.4	45.5	91.9	+ .47	3.0
Total	24.29	9.214	15.09	24.31	37.9	62.1	100.0	− .02	11.0
Average	4.86	1.84	3.02	4.86	....	....	....	.00	....
Entire preservative period:									
Total	86.53	34.97	51.43	86.41	40.4	59.4	99.8	+0.12	22.0
Average	4.81	1.94	2.86	4.80	....	....	....	+ .01	....
After period.									
1903—Apr. 15	....	....	....	....	....	....	....	....	....
16	....	....	....	....	....	....	....	....	....
17	2.94	6.59	2.22	2.86	22.4	75.5	97.9	+0.08	....
18	3.38	(a)	2.51	2.51	....	75.1	75.1	+ .84	....
19	4.33	(a)	2.87	2.87	....	66.3	66.3	+1.46	....
20	4.67	2.52	2.20	4.72	54.0	47.1	101.1	.05	....
21	4.60	2.14	3.41	5.85	52.4	74.8	127.2	−1.25	....
22	4.35	3.57	2.14	5.71	82.1	49.2	131.3	1.36	....
Total	24.27	9.159	15.41	24.55	37.7	63.5	101.2	− .28	....
Average	4.04	1.53	2.57	4.10	....	....	....	− .05	....

a No movement.

TABLE LXII.—*Phosphoric-acid balances for Series IV*—Continued.

No. 11.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	5.12	1.66	2.34	4.00	32.4	45.7	78.1	+1.12	....
21	5.35	1.24	2.46	3.70	23.2	46.0	69.2	+1.65	....
22	4.87	1.62	2.82	4.44	33.3	57.9	91.2	+ .43	....
23	(4.43)	Lost.	(2.83)	....	....	(63.4)	....	....	....
24	4.05	.691	3.09	3.78	17.0	76.3	93.3	+ .27	....
25	4.33	2.55	3.17	5.72	58.9	73.2	132.1	−1.39	....
26	4.60	1.06	2.52	3.58	23.0	54.8	77.8	+1.02	....
27	5.51	1.68	3.03	4.71	30.5	55.0	85.5	+ .80	....
Total	33.83	10.501	....	29.93	31.1	....	88.5	+3.90	....
	(38.26)	....	(22.26)	....	....	(58.2)	....	....	....
Average	4.83	1.50	....	4.28	....	....	....	+ .55	....
	(4.78)	....	(2.78)	....	....	....	....	....	....
Preservative period.									
First subperiod (excluded):									
1903—Mar. 28	4.45	2.50	2.98	5.48	56.2	67.0	123.2	−1.03	0.5
29	4.93	1.62	2.53	4.15	32.9	51.3	84.2	+ .78	.5
30	.97	3.24	2.10	5.34	33.4	21.6	55.0	−4.37	.0
Total	10.35	7.36	7.61	14.97	71.1	73.5	144.6	−4.62	1.0
Average	3.45	2.45	2.54	4.99	....	....	....	−1.54	....
Fore period.									
1903—Mar. 31	1.59	(*a*)	1.51	1.51	....	95.0	95.0	+0.08	0.0
Apr. 1	2.51	0.720	1.55	2.27	28.7	61.7	90.4	+ .24	.0
2	3.38	.601	2.20	2.80	17.7	65.1	82.8	+ .58	.0
3	4.96	1.11	2.69	3.80	22.4	54.2	76.6	+1.16	.0
Total	12.44	2.431	7.95	10.38	19.5	63.9	83.4	+2.06	.0
Average	3.11	.61	1.99	2.60	....	....	....	+ .51	....
Preservative period.									
1903—Apr. 4	4.44	2.10	3.04	5.14	47.3	68.5	115.8	−0.70	0.5
5	4.90	1.63	3.07	4.70	33.3	62.7	95.9	+ .20	1.0
6	4.41	1.58	2.86	4.44	35.8	64.9	100.7	− .03	1.0
7	4.77	2.61	2.88	5.49	54.7	60.4	115.1	− .72	1.0
8	4.41	1.28	2.65	3.93	29.0	60.1	89.1	+ .48	1.0
9	4.12	1.88	2.89	4.77	45.6	70.2	115.8	− .65	1.0
10	5.22	1.06	3.17	4.23	20.3	60.7	81.0	+ .99	1.0
11	4 20	1.63	3.28	4.91	38.8	78.1	116.9	− .71	1.0
12	4.69	2.02	2.90	4.92	43.1	61.8	104.9	− .23	2.0
13	4.12	1.83	3.49	5.32	44.4	84.7	129.1	−1.20	2.0
14	4.24	1.07	2.90	3.97	25.2	68.4	93.6	+ .27	3.0
Total	49.52	18.69	33.13	51.82	37.7	66.9	104.6	−2.30	14.5
Average	4.50	1.70	3.01	4.71	....	....	....	− .21	....
After period.									
1903—Apr. 15	3.95	0.598	2.46	3.06	15.2	62.3	77.5	+0.89	....
16	3.71	.630	2.30	2.93	17.0	62.0	79.0	+ .78	....
17	4.78	(*a*)	2.55	2.55	....	53.3	53.3	+2.23	....
18	3.75	4.80	3.97	8.77	128.0	105.9	233.9	−5.02	....
19	4.25	.488	2.31	2.80	11.5	54.4	65.9	+1.45	....
20	4.29	1.82	2.67	4.49	42.4	62.3	104.7	− .20	....
21	4.43	.606	2.65	3.26	13.7	59.8	73.6	+1.17	....
22	4.09	1.81	2.79	4.60	44.2	68.2	112.5	− .51	....
Total	33.25	10.752	21.70	32.46	32.3	65.3	97.6	+ .79	....
Average	4.16	1.35	2.71	4.06	....	....	....	+ .10	....

a No movement.

TABLE LXII.—*Phosphoric-acid balances for Series IV*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	3.44	1.65	2.12	3.77	48.0	61.6	109.6	−0.33	....
21	4.43	2.97	2.22	5.19	67.1	50.1	117.2	− .76	....
22	4.96	.794	2.28	3.07	16.0	45.9	61.9	+1.89	....
23	3.57	2.77	2.61	5.38	77.6	73.1	150.7	−1.81	....
24	3.37	2.16	2.27	4.43	64.1	67.4	131.5	−1.06	....
25	4.31	2.32	1.99	4.31	53.8	46.2	100.0	.00	....
26	4.06	1.87	2.58	4.45	46.1	63.5	109.6	− .39	....
27	4.71	2.20	2.37	4.57	46.7	50.3	97.0	+ .14	....
Total	32.85	16.73	18.44	35.17	50.9	56.1	107.0	−2.32	....
Average	4.11	2.09	2.30	4.39	....	....	....	− .28	....
Preservative period.									
First subperiod (excluded):									
1903—Mar. 28	3.87	1.24	2.46	3.70	32.0	63.6	95.6	+0.17	0.5
29	4.13	1.88	2.48	4.36	45.5	60.1	105.6	− .23	.5
30	3.77	2.76	2.29	5.05	73.2	60.8	134.0	−1.28	.5
31	(a)	....	....	....	....	....	....	....	.5
Total	11.77	5.88	7.23	13.11	50.0	61.4	111.4	−1.34	2.0
Average	3.92	1.96	2.41	4.37	....	....	....	− .45	....
Fore period.									
1903—Apr. 3	3.41	1.06	1.52	2.58	31.1	44.6	75.7	+0.83	0.0
4	3.89	.891	1.64	2.53	22.9	42.1	65.0	+1.36	.0
5	4.61	1.57	2.18	3.75	34.0	47.3	81.3	+ .86	.0
Total	11.91	3.52	5.34	8.86	29.6	44.8	74.4	+3.05	.0
Average	3.97	1.17	1.78	2.95	....	....	....	+1.02	....
Preservative period.									
1903—Apr. 6	3.96	1.68	2.20	3.88	42.4	55.6	98.0	+0.08	1.0
7	4.08	1.92	2.52	4.44	47.0	61.8	108.8	− .36	1.0
8	4.15	.400	2.43	2.83	9.7	58.5	68.2	+1.32	1.0
9	3.59	.488	3.00	3.49	13.6	83.6	97.2	+ .10	1.0
10	3.63	1.15	2.55	3.70	31.7	70.2	101.9	− .07	1.0
11	3.47	(b)	2.32	2.32	....	66.9	66.9	+1.15	1.0
12	3.94	2.01	3.07	5.08	51.0	77.9	128.9	−1.14	2.0
13	3.52	2.05	2.42	4.47	58.2	68.8	127.0	− .95	2.0
14	3.79	1.26	2.83	4.09	33.2	74.7	107.9	− .30	3.0
Total	34.11	10.958	23.34	34.30	32.1	68.5	100.8	− .19	13.0
Average	3.79	1.22	2.59	3.81	....	....	....	− .02	....
After period.									
1903—Apr. 15	1.29	(b)	1.51	1.54	....	119.4	119.4	0.25	....
16	1.15	1.46	2.33	3.79	126.9	202.6	329.5	2.64	....
17	4.41	.674	1.19	1.86	15.3	26.9	42.2	+2.55	....
18	4.15	2.41	1.98	4.39	58.1	47.7	105.8	− .24	....
19	3.81	1.50	2.15	3.65	39.4	56.4	95.8	+ .16	....
20	3.85	2.14	2.22	4.36	55.6	57.6	113.2	− .51	....
21	3.64	.825	2.41	3.23	22.7	66.2	88.7	+ .41	....
22	3.40	1.21	2.64	3.85	35.6	77.6	113.2	− .45	....
Total	25.70	10.219	16.46	26.67	39.7	64.1	103.8	− .97	....
Average	3.21	1.28	2.06	3.34	....	....	....	.13	....

[a] Discarded.

[b] No movement.

TABLE LXIII.—*Summary of phosphoric-acid balances for Series IV.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 8	34.03	7.62	......	28.03	22.4	......	82.4	+ 6.00	......
	(38.50)	......	(22.69)	......	......	(58.9)	......	......	......
No. 9	41.94	14.96	23.32	38.28	35.7	55.6	91.3	+ 3.66	......
No. 10	36.02	12.625	21.45	34.07	35.0	59.6	94.6	+ 1.95	......
Total	111.99	35.205	......	100.38	31.4	......	89.6	+ 11.61	......
	(116.46)	......	(67.46)	......	......	(57.9)	......	......	......
Average	4.87	1.53	......	4.36	......	......	......	+ .51	......
	(4.85)	......	(2.81)	......	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 8	19.23	8.66	11.90	20.56	45.0	61.9	106.9	− 1.33	2.0
No. 9	19.97	8.26	11.72	19.98	41.4	58.7	100.1	− .01	2.0
No. 10	19.08	9.57	11.05	20.62	50.2	57.9	108.1	− 1.54	2.0
Total	58.28	26.49	34.67	61.16	45.4	59.5	104.9	− 2.88	6.0
Average	4.86	2.21	2.89	5.10	......	......	......	− .24	......
Second subperiod:									
No. 8	19.46	6.32	11.42	17.74	32.5	58.7	91.2	+ 1.72	4.0
No. 9	20.45	5.40	11.93	17.33	26.4	58.3	84.7	+ 3.12	4.0
No. 10	19.42	6.94	10.83	17.77	35.7	55.8	91.5	+ 1.65	4.0
Total	59.33	18.66	34.18	52.84	31.5	57.6	89.1	+ 6.49	12.0
Average	4.94	1.55	2.85	4.40	......	......	......	+ .54	......
Subperiods 1 and 2:									
No. 8	38.69	14.98	23.32	38.30	38.7	60.3	99.0	+ 0.39	6.0
No. 9	40.42	13.66	23.65	37.31	33.8	58.5	92.3	+ 3.11	6.0
No. 10	38.50	16.51	21.88	38.39	42.9	58.8	99.7	+ .11	6.0
Total	117.61	45.15	68.85	114.00	38.4	58.5	96.9	+ 3.61	18.0
Average	4.90	1.88	2.87	4.75	......	......	......	+ .15	......
Third subperiod:									
No. 8	24.28	7.62	15.33	22.95	31.4	63.1	94.5	+ 1.33	5.0
No. 9	25.09	10.10	16.34	26.44	40.3	65.1	105.4	− 1.35	5.0
No. 10	23.74	9.25	14.46	23.71	39.0	60.9	99.9	+ .03	5.0
Total	73.11	26.97	46.13	73.10	36.9	63.1	100.0	+ .01	15.0
Average	4.87	1.80	3.07	4.87	......	......	......	.00	......
Subperiods 1, 2, and 3:									
No. 8	62.97	22.60	38.65	61.25	35.9	61.4	97.3	+ 1.72	11.0
No. 9	65.51	23.76	39.99	63.75	36.3	61.0	97.3	+ 1.76	11.0
No. 10	62.24	25.76	36.34	62.10	41.4	58.4	99.8	+ .14	11.0
Total	190.72	72.12	114.98	187.10	37.8	60.3	98.1	+ 3.62	33.0
Average	4.89	1.85	2.95	4.80	......	......	......	+ .09	......
Fourth subperiod:									
No. 8	23.78	7.315	14.08	21.40	30.8	59.2	90.0	+ 2.38	11.0
No. 9	24.74	8.86	16.00	24.86	35.8	64.7	100.5	− .12	11.0
No. 10	24.29	9.211	15.09	24.31	37.9	62.1	100.0	− .02	11.0
Total	72.81	25.39	45.17	70.57	34.9	62.0	96.9	+ 2.24	33.0
Average	4.85	1.69	3.01	4.70	......	......	......	+ .15	......
Entire preservative period:									
No. 8	86.75	29.915	52.73	82.65	34.5	60.8	95.3	+ 4.10	22.0
No. 9	90.25	32.62	55.99	88.61	36.2	62.0	98.2	+ 1.64	22.0
No. 10	86.53	34.97	51.43	86.41	40.4	59.4	99.8	+ .12	22.0
Total	263.53	97.51	160.15	257.67	37.0	60.8	97.8	+ 5.86	66.0
Average	4.88	1.81	2.96	4.77	......	......	......	+ .11	......
After period.									
No. 8	35.73	11.244	21.51	32.75	31.5	60.2	91.7	+ 2.98	......
No. 9	38.13	12.27	23.22	35.49	32.2	60.9	93.1	+ 2.64	......
No. 10	24.27	9.159	15.41	24.57	37.7	63.5	101.2	− .30	......
Total	98.13	32.67	60.14	92.81	33.3	61.3	94.6	+ 5.32	......
Average	4.46	1.48	2.74	4.22	......	......	......	+ .24	......

TABLE LXIII.—*Summary of phosphoric-acid balances for Series IV*—Continued.

Two men.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 11	12.44	2.431	7.95	10.38	19.5	63.9	83.4	+ 2.06	....
No. 12	11.91	3.52	5.34	8.86	29.6	44.8	74.4	3.05	....
Total	24.35	5.951	13.29	19.24	24.4	54.6	79.0	+ 5.11	....
Average	3.48	.850	1.90	2.75	....	....	....	+ .73	....
Preservative period.									
No. 11	49.52	18.69	33.13	51.82	37.7	66.9	104.6	− 2.30	14.5
No. 12	34.11	10.958	23.34	34.30	32.1	68.5	100.8	− .19	13.0
Total	83.63	29.648	56.47	86.12	35.5	67.5	103.0	− 2.49	27.5
Average	4.18	1.482	2.82	4.30	....	....	....	− .12	....
After period.									
No. 11	33.25	10.752	21.70	32.46	32.3	65.3	97.6	+ 0.79	....
No. 12	25.70	10.219	16.46	26.67	39.7	64.1	103.8	− .97	....
Total	58.95	20.971	38.16	59.13	35.6	64.7	100.3	− .18	....
Average	3.68	1.311	2.38	3.69	....	....	....	− .01	....

Five men.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.									
No. 7	28.99	13.74	14.00	27.74	47.4	48.3	95.7	+ 1.25	....
No. 8	34.03	7.62	....	28.03	22.4	....	82.4	+ 6.00	....
	(38.50)	....	(22.69)	....	....	(58.9)	....	....	....
No. 9	41.94	14.96	23.32	38.28	35.7	55.6	91.3	+ 3.66	....
No. 10	36.02	12.62	21.45	34.07	35.0	59.6	94.6	+ 1.95	....
No. 12	32.85	16.73	18.44	35.17	50.9	56.1	107.0	− 2.32	....
Total	173.83	65.67	....	163.29	37.8	....	93.9	+ 10.54	....
	(178.30)	....	(99.90)	....	....	(56.0)	....	....	....
Average	4.46	1.68	....	4.18	....	....	....	+ .28	....
	(4.46)	....	(2.50)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
No. 7	15.07	8.61	8.01	16.65	57.3	53.2	110.5	1.58	2.0
No. 8	19.23	8.66	11.90	20.56	45.0	61.9	106.9	− 1.33	2.0
No. 9	19.97	8.26	11.72	19.98	41.4	58.7	100.1	− .01	2.0
No. 10	19.08	9.57	11.05	20.62	50.2	57.9	108.1	− 1.54	2.0
No. 12	11.77	5.88	7.23	13.11	50.0	61.4	111.4	1.34	2.0
Total	85.12	41.01	49.91	90.92	48.2	58.6	106.8	− 5.80	10.0
Average	4.48	2.16	2.63	4.79	....	....	....	− .31	....

TABLE LXIV.—*Phosphoric-acid balances for Series V.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	....	Lost.	Not run.	....	....	....	....	....	....
25	4.64	1.93	2.96	4.89	41.6	63.8	105.4	− 0.25	....
26	4.84	1.71	2.82	4.53	35.3	58.3	93.6	+ .31	....
27	4.76	1.94	2.99	4.93	40.8	62.8	103.6	− .17	....
28	4.48	2.42	2.80	5.22	54.0	62.5	116.5	− .74	....
29	4.87	2.63	2.75	5.38	54.0	56.5	110.5	− .51	....
30	4.67	1.97	2.68	4.65	42.2	57.4	99.6	+ .02	....
May 1	4.91	4.37	2.86	7.23	89.0	58.3	147.3	− 2.32	....
Total	33.17	16.97	19.86	36.83	51.2	59.8	111.0	− 3.66	....
Average	4.74	2.42	2.84	5.26	....	....	....	− .52	....
Preservative period.									
First subperiod:									
1903—May 2	4.95	3.48	2.81	6.29	70.3	56.8	127.1	− 1.34	0.5
3	5.01	.825	3.03	3.85	16.5	60.5	76.9	+ 1.16	.5
4	4.76	2.98	2.89	5.87	62.6	60.7	123.3	− 1.11	.5
5	4.69	1.98	3.01	4.99	42.2	64.2	106.4	− .30	.5
6	4.69	2.75	3.04	5.79	58.6	64.8	123.5	− 1.10	.5
7	4.79	3.54	2.47	6.01	73.9	51.6	125.5	− 1.22	.5
8	4.66	1.23	2.82	4.05	26.4	60.5	86.9	+ .61	.5
9	4.53	2.76	2.66	5.42	60.9	58.7	119.6	− .89	.5
10	4.97	3.49	2.85	6.34	70.2	57.4	127.6	− 1.37	.5
11	4.86	1.79	2.76	4.55	36.8	56.8	93.6	+ .31	.5
12	4.71	2.63	3.13	5.76	55.8	66.5	122.3	− 1.05	.5
13	5.23	1.94	2.49	4.43	37.1	47.6	84.7	+ .80	.5
Total	57.85	29.395	33.96	63.35	50.8	58.7	109.5	− 5.50	6.0
Average	4.82	2.45	2.83	5.28	....	....	....	− .46	....
Second subperiod:									
1903—May 14	4.66	2.38	2.98	5.36	51.1	63.9	115.0	− 0.70	0.5
15	4.75	3.83	2.52	6.35	80.6	53.1	133.7	− 1.60	.5
16	4.53	2.80	2.98	5.78	61.8	65.8	127.6	− 1.25	.5
17	4.85	.630	2.73	3.36	13.0	56.3	69.3	+ 1.49	.5
18	4.66	2.32	2.46	4.78	49.8	52.8	102.6	− .12	.5
19	4.70	2.12	3.00	5.12	45.1	63.8	108.9	− .42	.5
20	4.62	2.87	2.55	5.42	62.1	55.2	117.3	− .80	.5
21	4.83	2.34	2.50	4.84	48.4	51.8	100.2	− .01	.5
22	4.90	2.56	2.91	5.47	52.2	59.4	111.6	− .57	.5
23	4.77	2.02	2.96	4.98	42.3	62.1	104.4	− .21	.5
24	5.07	2.69	3.17	5.86	53.1	62.5	115.6	− .79	.5
25	4.92	2.40	2.99	5.39	48.8	60.8	109.6	− .47	.5
Total	57.26	28.96	33.75	62.71	50.6	58.9	109.5	− 5.45	6.0
Average	4.76	2.41	2.81	5.23	....	....	....	− .47	....
Subperiods 1 and 2:									
Total	115.11	58.355	67.71	126.06	50.7	58.8	109.5	− 10.95	12.0
Average	4.80	2.431	2.82	5.25	....	....	....	− .45	....
Third subperiod:									
1903—May 26	4.62	3.56	2.86	6.42	77.1	61.9	139.0	− 1.80	0.5
27	4.53	1.95	3.07	5.02	43.0	67.8	110.8	− .49	.5
28	4.60	2.89	2.63	5.52	62.8	57.2	120.0	− .92	.5
29	4.93	1.88	2.68	4.56	38.1	54.4	92.5	+ .37	.5
30	5.09	2.04	2.85	4.89	40.1	56.0	96.1	+ .20	.5
31	(4.88)	Lost.	(2.51)	....	....	(51.4)	....	....	.5
June 1	4.56	4.65	2.95	7.60	102.0	64.7	166.7	− 3.04	.5
2	4.77	.555	3.19	3.74	11.6	66.9	78.5	+ 1.02	.5
3	4.80	2.81	2.77	5.58	58.5	57.7	116.2	− .78	.5
4	5.24	2.31	2.80	5.11	44.1	53.4	97.5	+ .13	.5
5	4.84	2.83	2.64	5.47	58.5	54.5	113.0	− .63	.5
6	4.59	2.24	2.61	4.85	48.8	56.9	105.7	− .26	.5
Total	52.57	27.715	....	58.76	52.7	....	111.8	− 6.19	6.0
	(57.45)	....	(33.56)	....	....	(58.4)	....	....	
Average	4.78	2.52	....	5.34	....	....	....	− .56	....
	(4.79)	....	(2.80)	....	....	....	....	....	....

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 1—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	167.68	86.07	....	184.82	51.3	....	110.2	− 17.14	18.0
	(172.56)	....	(101.27)	....	....	(58.7)	....	....	
Average	4.79	2.46	....	5.28	....	....	....	− .49	....
	(4.79)	....	(2.81)	....	....	....	....	....	....
Fourth subperiod:									
1903—June 7	5.18	2.26	2.68	4.94	43.6	51.7	95.4	+ 0.24	0.5
8	4.78	3.00	2.65	5.65	62.8	55.4	118.2	− .87	.5
9	4.71	2.54	2.85	5.39	53.9	60.5	114.4	− .68	.5
10	4.70	2.77	2.61	5.38	58.9	55.5	114.5	− .68	.5
11	4.82	2.75	2.76	5.51	57.1	57.3	114.3	− .69	.5
12	4.99	3.47	2.80	6.27	69.5	56.1	125.7	− 1.28	.5
13	4.68	2.42	2.67	5.09	51.7	57.1	108.8	− .41	.5
14	4.98	1.79	2.76	4.55	35.9	55.4	91.4	+ .43	.5
15	5.02	1.75	2.45	4.20	34.9	48.8	83.7	+ .82	.5
16	4.83	4.03	2.83	6.86	83.4	58.6	142.0	− 2.03	.5
17	4.83	2.41	2.60	5.01	49.9	53.8	103.7	− .18	.5
18	4.75	3.69	2.65	6.34	77.7	55.8	133.5	− 1.59	.5
19	5.60	3.82	2.91	6.73	68.2	52.0	120.2	− 1.13	.5
20	4.55	2.13	2.51	4.64	46.8	55.2	102.0	− .09	.5
Total	68.42	38.83	37.73	76.56	56.8	55.1	111.9	− 8.14	7.0
Average	4.89	2.77	2.70	5.47	....	....	....	− .58	....
Entire preservative period:									
Total	236.10	124.90	....	261.38	52.9	....	110.7	− 25.28	25.0
	(240.98)	....	(139.00)	....	....	(57.7)	....	....	
Average	4.82	2.55	....	5.33	....	....	....	− .51	....
	(4.82)	....	(2.78)	....	....	....	....	....	....
After period.									
1903—June 21	5.05	1.02	2.78	6.80	79.6	55.0	131.7	− 1.75	....
22	4.85	1.61	2.46	4.07	33.2	50.7	83.9	+ .78	....
23	5.35	3.38	2.73	6.11	63.2	51.9	114.2	− .76	....
24	4.86	2.31	2.91	5.25	48.1	59.5	108.0	− .39	....
25	4.99	2.74	2.52	5.26	54.9	50.0	105.4	.27	....
26	4.83	5.20	2.62	7.82	107.7	54.2	161.9	− 2.99	....
27	(4.66)	Lost.	(2.85)	....	....	(61.2)	....	....	....
28	5.51	2.42	2.91	5.33	43.9	52.8	96.7	+ .18	....
29	4.84	2.60	2.80	5.40	53.7	57.9	111.6	.56	....
Total	40.28	24.31	....	46.04	60.4	....	114.3	5.76	....
	(44.94)	....	(24.58)	....	....	(54.7)	....	....	....
Average	5.01	3.04	....	5.76	....	....	....	− .72	....
	(4.99)	....	(2.73)	....	....	....	....	....	....

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	[4.55]	[1.75]	Not run.	....	[38.5]	....	....	....	....
25	4.51	1.79	2.91	4.70	39.7	64.5	104.2	− 0.19	....
26	4.63	2.32	2.89	5.21	50.1	62.4	112.5	− .58	....
27	4.63	(a)	3.02	3.02	....	65.2	65.2	+ 1.61	....
28	(4.18)	Lost.	(3.04)	....	....	(72.7)	....	....	....
29	4.55	1.13	2.86	3.99	24.8	62.9	87.7	+ .56	....
30	4.23	1.68	2.59	4.27	39.7	61.2	100.9	− .04	....
May 1	4.56	2.03	2.74	4.77	44.5	60.1	104.6	− .21	....
Total	27.11	....	....	25.96	....	....	95.8	+ 1.15	....
	(31.29)	....	(20.05)	....	....	(64.1)	....	....	....
	[31.66]	[10.70]	....	....	[33.8]	....	....	....	....
Average	4.52	....	....	4.33	....	....	....	+ .19	....
	(4.47)	....	(2.86)	....	....	....	....	....	....
	[4.52]	[1.53]	....	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—May 2	4.37	2.16	3.23	5.39	49.4	73.9	123.3	− 1.02	0.5
3	4.74	2.37	3.15	5.52	50.0	66.5	116.5	− .78	.5
4	4.73	1.31	3.23	4.54	27.7	68.3	96.0	+ .19	.5
5	4.47	1.51	2.75	4.26	33.8	61.5	95.3	+ .21	.5
6	4.57	2.19	3.34	5.53	47.9	73.1	121.0	− .96	.5
7	4.59	2.10	1.86	3.96	45.8	40.5	86.3	+ .63	.5
8	4.16	1.79	2.38	4.17	43.0	57.2	100.2	+ .01	.5
9	4.40	1.18	2.53	3.71	26.8	57.5	84.3	+ .69	.5
10	4.51	1.60	2.88	4.48	35.5	63.8	99.3	+ .03	.5
11	4.65	1.98	2.93	4.91	42.6	63.0	105.6	− .26	.5
12	4.58	2.05	2.76	4.81	44.7	60.3	105.0	− .23	.5
13	4.31	1.56	2.36	3.92	36.2	54.8	91.0	+ .39	.5
Total	54.08	21.80	33.40	55.20	40.3	61.8	102.1	− 1.12	6.0
Average	4.51	1.82	2.78	4.60	....	....	....	− .09	....
Second subperiod:									
1903—May 14	4.06	2.02	3.08	5.10	49.8	75.9	125.6	− 1.04	.5
15	4.41	1.93	2.58	4.51	43.8	58.5	102.3	− .10	.5
16	4.51	1.83	3.10	4.93	40.6	68.7	109.3	− .42	.5
17	4.14	1.70	3.03	4.73	41.1	73.2	114.3	− .59	.5
18	4.55	2.15	2.42	4.57	47.3	53.2	100.4	− .02	.5
19	4.21	2.28	2.62	4.90	54.2	62.2	116.4	− .69	.5
20	4.06	1.36	2.90	4.26	33.5	71.4	104.9	− .20	.5
21	4.02	1.42	2.73	4.15	35.3	67.9	103.2	− .13	.5
22	4.95	1.57	2.78	4.35	31.7	56.2	87.9	+ .60	.5
23	4.28	1.76	2.79	4.55	41.1	65.2	106.3	− .27	.5
24	3.70	1.12	3.04	4.16	30.3	82.1	112.4	− .46	.5
25	4.06	1.41	2.51	3.92	34.7	61.8	96.6	+ .14	.6
Total	50.95	20.55	33.58	54.13	40.3	65.9	106.2	− 3.18	6.0
Average	4.25	1.71	2.80	4.51	....	....	....	− .26	....
Subperiods 1 and 2:									
Total	105.03	42.35	66.98	109.33	40.3	63.8	104.1	− 4.30	12.0
Average	4.38	1.76	2.79	4.56−	....	....	....	− .17	....
Third subperiod:									
1903—May 26	4.31	1.67	2.59	4.26	38.7	60.1	98.8	+ 0.05	0.5
27	3.56	1.18	2.67	3.85	33.1	75.0	108.1	− .29	.5
28	3.52	2.51	2.34	4.85	71.3	66.5	137.8	− 1.33	.5
29	3.91	.822	2.51	3.33	21.0	64.2	85.2	+ .58	.5
30	4.11	1.42	2.45	3.87	34.5	59.6	94.2	− .24	.5
31	3.75	1.48	2.52	4.00	39.5	67.2	106.7	− .25	.5
June 1	3.48	2.22	2.72	4.94	63.8	78.2	142.0	− 1.46	.5
2	3.70	1.43	2.08	3.51	38.6	56.2	94.9−	+ .19	.5
3	3.18	1.58	2.34	3.92	49.7	73.6	128.3	− .74	.5
4	4.89	1.03	2.48	3.51	21.1	50.7	71.8	+ 1.38	.5
5	2.21	.861	1.98	2.84	38.9	89.6	128.5	− .63	.5
6	2.90	1.78	2.60	4.38	61.4	89.7	151.0	− 1.48	.5
Total	43.52	17.983	29.28	47.26	41.3	67.3	108.6	− 3.74	6.0
Average	3.63	1.50	2.44	3.94	....	....	....	− .31	....

a No movement.

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 2—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Subperiods 1, 2, and 3:									
Total	148.55	60.33	96.26	156.59	40.6	64.8	105.4	− 8.04	18.0
Average	4.13	1.68	2.67	4.35	....	....	....	− .22	....
Fourth subperiod:									
1903—June 7	3.26	1.52	2.09	3.61	46.6	64.1	110.7	− 0.35	0.5
8	3.34	.393	2.56	2.95	11.7	76.6	88.3	+ .39	.5
9	2.35	1.75	1.77	3.52	74.5	75.3	149.8	− 1.17	.5
10	2.87	.846	2.20	3.05	29.5	76.7	106.3	− .18	.5
11	3.28	.994	2.49	3.48	30.2	75.9	106.1	− .20	.5
12	3.21	.859	2.15	3.01	26.8	67.0	93.8	+ .20	.0
13	3.29	.987	2.55	3.54	30.0	77.5	107.6	− .25	.0
14	3.36	.416	2.48	2.90	12.4	73.8	86.3	+ .46	.0
15	4.49	1.86	1.96	3.82	41.4	43.7	85.1	+ .67	.0
16	3.45	1.45	2.86	4.31	42.0	82.9	124.9	− .86	.0
17	3.45	1.79	2.60	4.39	51.9	75.3	127.2	− .94	.0
18	2.90	1.21	2.41	3.62	41.7	83.1	124.8	− .72	.0
19	4.21	1.72	2.61	4.33	40.9	62.0	102.9	− .12	.0
20	3.71	2.74	2.45	5.19	73.9	66.0	139.9	− 1.48	.0
Total	47.17	18.535	33.18	51.72	39.3	70.3	109.6	4.55	2.5
Average	3.37	1.32	2.37	3.69	....	....	....	− .32	....
Entire preservative period:									
Total	195.72	78.87	129.44	208.31	40.3	66.1	106.4	−12.59	20.5
Average	3.91	1.58	2.59	4.17	....	....	....	− .26	....
After period.									
1903—June 21	3.12	1.32	2.53	3.85	42.3	81.1	123.4	− 0.73	....
22	3.37	1.43	2.30	3.73	42.1	68.3	110.7	− .36	....
23	3.67	1.25	2.18	3.43	34.1	59.4	93.5	+ .24	....
24	4.74	2.85	2.20	5.05	60.1	46.4	106.5	− .31	....
25	4.66	3.15	2.52	5.67	67.6	54.1	121.7	1.01	....
26	4.74	1.92	2.50	4.42	40.5	52.7	93.2	+ .32	....
27	5.02	2.71	2.46	5.17	54.0	49.0	103.0	.15	....
28	5.15	1.41	3.10	4.51	27.4	60.2	87.6	+ .64	....
29	4.69	2.11	2.78	4.89	45.0	59.3	101.3	− .20	....
Total	39.16	18.15	22.57	40.72	46.4	57.6	101.0	1.56	....
Average	4.35	2.02−	2.51	4.52	....	....	....	.17+	....

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	....	....	....	....	....	....	....	....	....
25	3.00	0.640	1.99	2.63	21.3	66.4	87.7	+ 0.37	....
26	3.33	1.37	3.15	4.52	41.1	94.6	135.7	− 1.19	....
27	3.68	.571	2.56	3.13	15.5	69.6	85.1	+ .55	....
28	3.68	2.40	2.82	5.22	65.2	76.6	141.8	− 1.54	....
29	3.27	1.42	3.11	4.53	43.4	95.1	138.5	− 1.26	....
30	3.02	.846	2.34	3.19	28.0	77.5	105.6	− .17	....
May 1	3.93	1.98	2.22	4.20	50.4	56.5	106.9	− .27	....
Total	23.91	9.227	18.19	27.42	38.6	76.1	114.7	− 3.51	....
Average	3.42	1.32	2.60	3.92	....	....	....	− .50	....
Preservative period.									
First subperiod:									
1903—May 2	3.84	1.13	2.65	3.78	29.4	69.0	98.4	+ 0.06	0.5
3	3.46	1.43	2.59	4.02	41.3	74.9	116.2	− .56	.5
4	[3.25]	[1.27]	Lost.	....	[39.1]	....	....	....	.5
5	3.15	.948	2.55	3.50	30.1	81.0	111.1	− .35	.5
6	3.30	.821	2.78	3.60	24.9	84.2	109.1	− .30	.5
7	3.42	1.30	2.20	3.50	38.0	64.3	102.3	− .08	.5
8	3.31	1.05	2.53	3.58	31.7	76.4	108.2	− .27	.5
9	4.36	1.20	2.12	3.32	27.5	48.6	76.1	+ 1.04	.5
10	4.25	1.23	2.66	3.89	28.9	62.6	91.5	+ .36	.5
11	4.40	1.04	2.75	3.79	23.6	62.5	86.1	+ .61	.5
12	3.66	1.96	2.50	4.46	53.6	68.3	121.9	− .80	.5
13	4.33	1.29	2.42	3.71	29.8	55.9	85.7	+ .62	.5
Total	41.48 [44.73]	.... [14.669]	27.75	41.15	.... [32.8]	66.9	99.2	+ .33	6.0
Average	3.77 [3.73]	.... [1.22]	2.52	3.74	....	....	....	+ .03	....
Second subperiod:									
1903—May 14	3.24	1.58	2.81	4.39	48.8	86.7	135.5	− 1.15	0.5
15	3.55	1.49	2.10	3.59	42.0	59.2	101.1	− .04	.5
16	3.41	1.40	2.86	4.26	41.1	83.9	124.9	− .85	.5
17	3.56	1.68	2.41	4.09	47.2	67.7	114.9	− .53	.5
18	3.48	.846	2.28	3.13	24.3	65.5	89.9	+ .35	.5
19	3.57	1.25	2.30	3.55	35.0	64.4	99.4	+ .02	.5
20	3.26	.856	3.03	3.89	26.3	92.9	119.3	− .63	.5
21	3.62	1.10	2.72	3.82	30.4	75.1	105.5	− .20	.5
22	3.62	1.72	2.47	4.19	47.5	68.2	115.7	− .57	.5
23	3.54	1.25	2.68	3.93	35.3	75.7	111.0	− .39	.5
24	3.29	1.36	2.31	3.67	41.3	70.2	111.6	− .38	.5
25	4.08	1.17	2.42	3.59	28.7	59.3	88.0	+ .49	.5
Total	42.22	15.702	30.39	46.10	37.2	72.0	109.2	− 3.88	6.0
Average	3.52	1.31	2.53	3.84	....	....	....	− .32	....
Subperiods 1 and 2:									
Total	83.70 [86.95]	.... [30.371]	58.14	87.25	.... [34.9]	69.4	104.2	− 3.55	12.0
Average	3.64 [3.62]	.... [1.27]	2.53	3.79	....	....	....	− .15	....
Third subperiod:									
1903—May 26	3.38	1.72	2.56	4.28	50.9	75.7	126.6	− 0.90	0.5
27	3.28	.784	2.63	3.41	23.9	80.2	104.0	− .13	.5
28	2.96	1.59	2.47	4.06	53.7	83.4	137.2	− 1.10	.5
29	3.58	.923	2.06	2.98	25.8	57.5	83.2	+ .60	.5
30	4.92	2.21	3.26	5.47	44.9	66.3	111.2	− .55	.5
31	(3.53)	Lost.	(2.68)	....	....	(75.9)	....	....	.5
June 1	3.21	1.49	2.60	4.09	46.4	81.0	127.4	− .88	.5
2	3.55	.414	2.86	3.27	11.7	80.5	92.2	+ .28	.5
3	3.91	1.07	2.60	3.67	27.4	66.5	93.9	+ .24	.5
4	3.94	1.41	2.35	3.76	35.8	59.6	95.4	+ .18	.5
5	3.45	1.23	1.91	3.14	35.7	55.4	91.0	+ .31	.5
6	3.29	1.44	2.21	3.65	43.8	67.2	110.9	− .36	.5
Total	39.47 (43.00)	14.281−	.... (30.19)	41.78	36.2	.... (70.2)	105.9	−2.31	6.0
Average	3.59 (3.58)	1.30	.... (2.52)	3.80	....	....	....	− .21	....

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 3—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Subperiods 1, 2, and 3:									
Total	123.17	....	....	129.03	....	....	104.7	−5.86	18.0
	(126.70)	....	(88.33)	....	....	(69.7)	....	....	
	[126.42]	[44.652]	....	....	[35.3]	....	....	....	
Average	3.62	....	....	3.80	....	....	....	− .18	....
	(3.62)	....	(2.52)	....	....	....	....	....	....
	[3.61]	[1.93]	....	....	....	....	....	....	....
Fourth subperiod:									
1903—June 7	3.93	0.583	2.57	3.15	14.8	65.4	80.2	+0.78	0.5
8	3.41	1.90	2.23	4.13	55.7	65.4	121.1	− .72	.5
9	3.57	1.45	2.57	4.02	40.6	72.0	112.6	− .45	.5
10	3.42	1.36	2.49	3.85	39.8	72.8	112.6	− .43	.5
11	3.96	1.44	2.48	3.92	36.4	62.6	99.0	+ .04	.5
12	3.46	.676	2.45	3.13	19.5	70.7	90.5	+ .33	.5
13	3.41	1.53	2.54	4.07	44.9	74.5	119.4	− .66	.5
14	3.34	.982	2.36	3.34	29.4	70.7	100.0	.00	.5
15	3.74	.726	2.26	2.99	19.4	60.4	79.9	+ .75	.5
16	3.51	1.93	2.59	4.52	55.0	73.8	128.8	−1.01	.5
17	3.56	1.40	2.65	4.05	39.3	74.4	113.8	− .49	.5
18	4.33	1.56	2.29	3.85	36.0	52.9	88.9	+ .48	.5
19	4.38	.393	3.08	3.47	9.0	70.3	79.2	+ .91	.5
20	3.99	2.25	2.58	4.83	56.4	64.7	121.1	− .84	.5
Total	52.01	18.180	35.14	53.32	35.0	67.6	102.5	−1.31	7.0
Average	3.72	1.30	2.51	3.81	....	....	....	− .09	....
Entire preservative period:									
Total	175.18	....	....	182.35	....	....	104.1	−7.17	25.0
	(178.71)	....	(123.47)	....	....	(69.1)	....	....	
	[178.43]	[62.832]	....	....	[35.2]	....	....	....	
Average	3.65	....	....	3.80	....	....	....	− .15	....
	(3.65)	....	(2.52)	....	....	....	....	....	....
	[3.64]	[1.28]	....	....	....	....	....	....	....
After period.									
1903—June 21	3.69	1.27	2.40	3.67	34.4	65.0	99.4	+0.02	....
22	3.54	1.30	2.34	3.64	36.7	66.1	102.8	− .10	....
23	4.65	1.05	2.88	3.93	22.6	61.9	84.5	+ .72	....
24	3.69	1.98	2.88	4.86	53.7	78.0	131.7	−1.17	....
25	4.06	1.95	2.40	4.35	48.0	59.1	107.1	− .29	....
26	4.63	2.05	2.50	4.55	44.3	54.0	98.3	+ .08	....
27	3.81	1.50	2.67	4.17	39.4	70.1	109.4	− .36	....
28	5.74	2.10	2.35	4.45	36.6	40.9	77.5	+1.29	....
29	3.87	1.37	2.59	3.96	35.4	66.9	102.3	− .09	....
Total	37.68	14.57	23.01	37.58	38.7	61.1	99.7	+ .10	....
Average	4.19	1.62	2.56	4.18	....	....	....	+ .01	....

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	[4.66]	[0.827]	(a)	....	[17.7]	....	....	....	....
25	2.96	(b)	2.71	2.71	....	91.6	91.6	+0.25	....
26	3.52	1.56	2.88	4.44	44.3	81.8	126.1	− .92	....
27	3.57	1.39	3.01	4.40	38.9	84.3	123.2	− .83	....
28	3.74	1.17	3.05	4.22	31.3	81.6	112.8	− .48	....
29	2.24	.751	2.61	3.36	33.5	116.5	150.0	−1.12	....
30	3.41	1.31	2.71	4.02	38.4	79.5	117.9	− .61	....
May 1	3.48	2.13	3.22	5.35	61.2	92.5	153.7	−1.87	....
Total	22.92	....	20.19	28.50	....	88.1	124.3	−5.58	....
	[27.58]	[9.138]	....	....	[33.1]	....	....	....	....
Average	3.27	....	2.88	4.07	....	....	....	− .80	....
	[3.45]	[1.142]	....	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—May 2	4.10	(b)	3.11	3.11	....	75.9	75.9	+0.99	0.5
3	3.54	1.67	2.95	4.62	47.2	83.3	130.5	−1.08	.5
4	3.59	.792	3.47	4.26	22.1	96.7	118.7	− .67	.5
5	4.52	1.52	2.89	4.41	33.6	63.9	97.6	+ .11	.5
6	3.52	.705	3.02	3.72	20.0	85.8	105.7	− .20	.5
7	3.19	1.19	2.40	3.59	37.3	75.2	112.5	− .40	.5
8	3.04	1.05	2.43	3.48	34.5	79.9	114.5	− .44	.5
9	3.23	1.33	2.49	3.82	41.2	77.1	118.3	− .59	.5
10	3.60	.620	2.71	3.33	17.2	75.3	92.5	+ .27	.5
11	3.42	1.24	2.32	3.56	36.3	67.8	104.1	− .14	.5
12	3.16	1.42	2.47	3.89	44.9	78.2	123.1	− .73	.5
13	2.87	1.03	2.26	3.29	35.9	78.7	114.6	− .42	.5
Total	41.78	12.567	32.52	45.08	30.1	77.8	107.9	−3.30	6.0
Average	3.48	1.047	2.71	3.76	....	....	....	− .28	....
Second subperiod:									
1903—May 14	3.63	1.49	3.65	5.14	41.0	100.6	141.6	−1.51	0.5
15	4.03	.576	2.68	3.26	14.3	66.5	80.9	+ .77	.5
16	3.97	1.65	3.52	5.17	41.6	88.7	130.2	−1.20	.5
17	3.00	1.26	3.06	4.32	42.0	102.0	144.0	−1.32	.5
18	3.84	1.29	2.93	4.22	33.6	76.3	109.9	− .38	.5
19	3.60	2.69	2.55	5.24	74.7	70.8	145.6	−1.64	.5
20	4.07	(b)	3.09	3.09	....	75.9	75.9	+ .98	.5
21	4.06	.441	2.70	3.14	10.9	66.5	77.3	+ .92	.5
22	4.60	2.37	2.85	5.22	51.5	62.0	113.5	− .62	.5
23	3.67	2.13	3.10	5.23	58.0	84.5	142.5	−1.56	.5
24	4.13	1.14	3.07	4.21	27.6	74.3	101.9	− .08	.5
25	4.89	.999	3.23	4.23	20.4	66.1	86.5	+ .66	.5
Total	47.49	16.04	36.43	52.47	33.8	76.7	110.5	−4.98	6.0
Average	3.96	1.34	3.04	4.37	....	....	....	− .41	....
Subperiods 1 and 2:									
Total	89.27	28.61	68.95	97.55	32.0	77.2	109.3	−8.28	12.0
Average	3.72	1.19	28.73	4.06	....	....	....	− .35	....

a Not run.

b No movement.

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	[4.91]	[1.44]	(a)		[29.3]				
25	4.62	.536	3.68	4.22	11.6	79.7	91.3	+0.40	
26	4.71	2.40	3.46	5.86	51.0	73.5	124.4	1.15	
27	4.50	2.66	3.85	6.51	59.1	85.6	144.7	−2.01	
28	4.76	(b)	3.58	3.58		75.2	75.2	1.18	
29	4.67	1.10	3.82	4.92	23.6	81.8	105.4	−.25	
30	4.58	2.13	3.38	5.51	46.5	73.8	120.3	.93	
May 1	4.91	2.84	3.27	6.11	57.8	66.6	124.4	1.20	
Total	32.75		25.04	36.71		76.5	112.1	−3.96	
	[37.66]	[13.106]			[34.8]				
Average	4.68		3.58	5.24				−.56	
	[4.71]	[1.638]							
Preservative period.									
First subperiod:									
1903—May 2	4.88	1.09	3.43	4.52	22.3	70.3	92.6	+0.36	0.5
3	4.61	.988	3.57	4.56	21.4	77.4	98.9	+ .05	.5
4	4.63	2.94	3.68	6.62	63.5	79.5	143.0	−1.99	.5
5	4.93	1.47	3.55	5.02	29.8	72.0	101.8	− .09	.5
6	4.71	.620	3.75	4.37	13.2	79.6	92.8	+ .34	.5
7	4.84	2.33	2.91	5.24	48.1	60.1	108.3	− .40	.5
8	4.72	2.26	3.36	5.62	47.9	71.2	119.1	− .90	.5
9	4.73	2.55	2.80	5.35	53.9	59.2	113.1	− .62	.5
10	5.60	2.27	3.35	5.62	40.5	59.8	100.4	− .02	.5
11	5.07	1.24	3.22	4.46	24.5	63.5	88.0	+ .61	.5
12	4.88	1.72	2.95	4.67	35.2	60.5	95.7	+ .21	.5
13	4.46	3.12	2.95	6.07	70.0	66.1	136.1	1.61	.5
Total	58.06	22.598	39.52	62.12	38.9	68.1	107.0	−4.06	6.0
Average	4.84	1.883	3.29	5.18				− .34	
Second subperiod:									
1903—May 14	4.51	(b)	3.40	3.40		75.4	75.4	+1.11	0.5
15	4.98	2.52	3.09	5.61	50.6	62.0	112.7	−.63	.5
16	5.64	3.18	3.47	6.65	56.4	61.5	117.9	−1.01	.5
17	5.30	(b)	3.20	3.20		60.4	60.4	+2.10	.5
18	4.79	.991	3.17	4.16	20.7	66.2	86.9	+ .63	.5
19	4.69	(b)	2.44	2.44		52.0	52.0	+2.25	.5
20	4.63	4.19	3.04	7.23	90.5	65.7	156.2	2.60	.5
21	4.79	(b)	3.28	3.28		68.5	68.5	+1.51	.5
22	4.86	4.28	2.90	7.18	88.1	59.7	147.7	−2.32	.5
23	4.51	4.27	3.17	7.44	94.7	70.3	165.0	−2.93	.5
24	4.61	1.47	3.81	5.28	31.9	82.6	114.5	− .67	.5
25	(4.95)	Lost.	(3.21)			(64.8)			.5
Total	53.31	20.901		55.87	39.2		104.8	−2.56	6.0
	(58.26)		(38.18)			(65.5)			
Average	4.85	1.900		5.08				− .23	
	(4.86)		(3.18)						
Subperiods 1 and 2:									
Total	111.37	43.499		117.99	39.1		105.9	−6.62	12.0
	(116.32)		(77.72)			(66.8)			
Average	4.84	1.891		5.13				.29	
	(4.85)		(3.24)						
Third subperiod:									
1903—May 26	4.46	0.210	3.10	3.31	4.7	69.5	74.2	+1.15	0.5
27	2.99	(b)	2.08	2.08		69.6	69.6	+ .91	.0
28	4.37	(b)	2.83	2.83		64.8	64.8	+1.54	.5
29	4.53	4.07	3.10	7.17	89.8	68.4	158.3	−2.64	.5
30	5.14	1.53	3.64	5.17	29.8	70.8	100.6	− .03	.5
31	3.95	3.35	2.76	6.11	84.8	69.9	154.7	−2.16	.5
June 1	3.93	.238	2.70	2.91	6.1	68.7	71.8	.99	.5
2	4.59	2.76	3.30	6.06	60.1	71.9	132.0	1.47	.5
3	4.64	3.90	3.06	6.96	84.1	65.9	150.0	−2.32	.5
4	4.98	1.15	2.81	3.96	23.1	56.4	79.5	1.02	.5
5	4.03	(b)	2.88	2.88		71.5	71.5	+1.15	.5
6	4.10	5.09	3.39	8.48	124.1	82.7	206.8	−4.38	.5
Total	51.71	22.298	35.65	57.95	43.1	68.9	112.1	−6.24	5.5
Average	4.31	1.858	2.97	4.83				.52	

a Not run. *b* No movement.

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 5—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2+1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Borax administered.
Fore period.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	163.08 (168.03)	65.797	 (113.35)	175.94	40.3	 (67.5)	107.9	−12.86	17.5
Average	4.66 (4.67)	1.880	 (3.15)	5.03				− .37	
Fourth subperiod:									
1903—June 7	4.35	(a)	2.52	2.52		57.9	57.9	+ 1.83	0.5
8	4.68	(a)	2.61	2.61		55.8	55.8	+ 2.07	.5
9	4.74	4.68	3.22	7.90	98.7	68.0	166.7	− 3.16	.5
10	4.84	(a)	3.12	3.12		64.5	64.5	+ 1.72	.5
11	4.85	3.55	3.15	6.70	73.2	64.9	138.1	− 1.85	.5
12	5.02	1.57	3.43	5.00	31.3	68.3	99.6	+ .02	.5
13	4.39	4.07	3.20	7.27	92.7	72.9	165.6	− 2.88	.5
14	4.40	(a)	2.77	2.77		63.0	163.0	+ 1.63	.5
15	4.85	2.27	3.02	5.29	46.8	62.3	109.1	− .44	.5
16	4.47	1.72	3.13	4.85	38.5	70.0	108.5	− .38	.5
17	4.81	3.33	3.17	6.50	69.2	65.9	135.1	− 1.69	.5
18	5.70	2.59	3.28	5.87	45.5	57.5	103.0	− .17	.5
19	5.57	(a)	3.15	3.15		56.5	56.5	+ 2.42	.5
20	4.78	5.41	3.25	8.66	113.2	68.0	181.2	− 3.88	.5
Total	67.45	29.19	43.02	72.21	43.3	63.8	107.1	− 4.76	7.0
Average	4.82	2.085	3.07	5.16				− .34	
Entire preservative period:									
Total	230.53 (235.48)	94.987	 (156.37)	248.15	41.2	 (66.4)	107.6	−17.62	24.5
Average	4.70 (4.71)	1.939	 (3.13)	5.06				− .36	
After period.									
1903—June 21	4.74	(a)	3.21	3.21		67.7	67.7	+ 1.53	
22	4.81	2.13	2.79	4.92	44.3	58.0	102.3	− .11	
23	4.29	1.34	3.04	4.38	31.2	70.9	102.1	− .09	
24	4.98	2.09	2.93	5.02	42.0	58.8	100.8	− .04	
25	5.08	3.00	3.01	6.01	59.1	59.2	118.3	− .93	
26	5.13	3.28	2.82	6.10	63.9	55.0	118.9	− .97	
27	4.39	1.86	2.94	4.80	42.4	67.0	109.3	− .41	
28	4.58	3.46	2.83	6.29	75.5	61.8	137.3	− 1.71	
29	4.52	1.07	2.67	3.74	23.7	59.1	82.7	+ .78	
Total	42.52	18.23	26.24	44.47	42.9	61.7	104.6	− 1.95	
Average	4.72	2.026	2.92	4.94				− .22	

[a] No movement.

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	....	....	....	....	....	....	....	....	....
25	2.44	1.08	2.35	3.43	44.3	96.3	140.6	−0.99	....
26	3.34	1.44	2.34	3.78	43.1	70.1	113.2	− .44	....
27	3.06	.821	2.36	3.18	26.8	77.1	103.9	− .12	....
28	3.13	1.43	2.37	3.80	45.7	75.7	121.4	.67	....
29	3.25	1.26	2.37	3.63	38.8	72.9	111.7	− .38	....
30	2.91	1.75	2.32	4.07	60.1	79.7	139.9	−1.16	....
May 1	3.82	([a])	2.36	2.36	....	61.8	61.8	+1.46	....
Total	21.95	7.781	16.47	24.25	35.4	75.0	110.5	−2.30	....
Average	3.14	1.112	2.35	3.46	....	....	....	− .32	....
Preservative period.									
First subperiod:									
1903—May 2	3.49	1.63	2.47	4.10	46.7	70.8	117.5	−0.61	0.5
3	3.53	2.11	2.60	4.71	59.8	73.7	133.4	−1.18	.5
4	3.04	1.21	2.34	3.58	40.8	77.0	117.8	− .54	.5
5	3.30	.812	1.62	2.43	24.6	49.1	73.6	+ .87	5
6	3.21	1.25	2.47	3.72	38.9	76.9	115.9	− .51	.5
7	3.44	2.16	2.11	4.27	62.8	61.3	124.1	− .83	.5
8	3.13	([a])	2.20	2.20	....	70.3	70.3	+ .93	.0
9	3.06	2.39	2.10	4.49	78.1	68.6	146.7	−1.43	.0
10	4.75	1.94	2.14	4.08	40.8	45.1	85.9	+ .67	.5
11	3.53	.486	2.16	2.65	13.8	61.2	75.1	+ .88	.5
12	3.93	1.04	2.32	3.36	26.5	59.0	85.5	+ .57	5
13	3.73	1.93	2.35	4.28	51.7	63.0	114.7	− .55	.5
Total	42.14	16.988	26.88	43.87	40.3	63.8	104.1	1.73	5.0
Average	3.51	1.416	2.24	3.66	....	....	....	− .15	....
Second subperiod:									
1903—May 14	3.04	1.20	2.24	3.44	39.5	73.7	113.2	−0.40	0.5
15	3.39	2.06	1.88	3.94	60.8	55.4	116.2	− .55	.5
16	2.87	.996	2.04	3.04	34.7	71.1	105.9	− .17	.5
17	3.33	.415	2.77	3.185	12.5	83.2	95.6	+ .15	.5
18	3.28	1.81	1.95	3.76	55.2	59.5	114.6	− .48	.5
19	3.21	1.68	1.96	3.64	52.3	61.1	113.4	− .43	.5
20	3.59	1.43	2.18	3 61	39.8	60.7	100.6	− 02	.5
21	3.29	2.15	2.12	4.27	65.3	64.4	129.8	− .98	.5
22	4.11	1.06	2.48	3.54	25.8	60.3	86.1	+ .57	.5
23	3.16	1.19	2.62	3.81	37.7	82.9	120.6	− .65	.5
24	3.67	2.00	2.35	4.35	54.5	64.0	118.5	− .68	.5
25	3.46	.945	2.35	3.30	27.3	67.9	95.4	+ .16	.5
Total	40.40	16.936	26.91	43.88	41.9	66.7	108.6	−3.48	6.0
Average	3.37	1.411	2.24	3.66	....	....	....	− .29	....
Subperiods 1 and 2:									
Total	82.54	33.924	53.82	87.75	41.1	65.2	106.3	−5.21	11.0
Average	3.44	1.414	2.24	3.66	....	....	....	− .22	....
Third subperiod:									
1903—May 26	3.00	0.781	2.30	3.08	26.0	76.7	102.7	−0.08	0.5
27	3.01	([a])	2.31	2.31	....	76.0	76.0	+ .73	.5
28	3.26	2.26	2.18	4.44	69.3	66.9	136.2	−1.18	.5
29	3.42	2.42	1.76	4.18	70.8	51.5	122.2	− .76	.5
30	3.43	.440	3.04	3.48	12.8	88.6	101.5	− .05	.5
31	2.83	.865	1.66	2.52	30.6	58.7	89.0	+ .31	.5
June 1	2.69	1.92	2.19	4.11	71.4	81.4	152.8	−1.42	.5
2	3.38	1.70	2.57	4.27	50.3	76.0	126.3	− .89	.5
3	3.83	1.46	2.03	3.49	38.1	53.0	91.1	+ .34	.5
4	3.77	.947	1.99	2.94	25.1	52.8	78.0	+ .83	.5
5	3.45	1.87	1.96	3.83	54.2	56.8	111.0	− .38	.5
6	2.93	.904	1.93	2.834	30.9	65.9	96.7	+ .096	.5
Total	39.03	15.567	25.92	41.484	39.9	66.4	106.3	2.454	6.0
Average	3.25	1.297	2.16	3.457	....	....	....	− .207	....
Subperiods 1, 2, and 3:									
Total	121.57	49.491	79.74	129.231	40.7	65.6	106.3	−7.664	17.0
Average	3.38	1.375	2.22	3.590	....	....	....	− .21	....

[a] No movement.

TABLE LXIV.—*Phosphoric-acid balances for Series V*—Continued.

No. 6—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Fourth subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—June 7	3.67	2.23	1.93	4.16	60.8	52.6	113.4	−0.49	0.5
8	3.15	2.44	1.50	3.94	77.5	47.6	125.1	− .79	.5
9	3.31	1.41	2.15	3.56	42.6	65.0	107.6	− .25	.5
10	3.21	.616	2.51	3.13	19.2	78.2	97.5	+ .08	.5
11	3.42	1.15	1.76	2.91	33.6	51.5	85.1	+ .51	.5
12	3.17	1.45	2.23	3.68	45.7	70.3	116.1	− .51	.0
13	2.74	.838	2.11	2.95	30.6	77.0	107.7	− .21	.0
14	3.33	2.16	1.90	4.06	64.9	57.1	121.9	− .73	.0
15	3.51	1.23	2.01	3.24	35.0	57.3	92.3	+ .27	.0
16	3.23	1.21	2.01	3.22	37.5	62.2	99.7	+ .01	.0
17	3.66	(a)	1.87	1.87	....	51.1	51.1	+1.79	.0
18	3.52	3.43	1.91	5.34	97.4	54.3	151.7	−1.82	.0
19	3.10	(a)	1.65	1.65	....	53.2	53.2	+1.45	.0
20	(3.05)	Lost.	(2.20)	....	....	(72.1)	....	....	.0
Total	43.02 (46.07)	18.164	.... (27.74)	43.71	42.2	.... (60.2)	101.6	−0.69	2.5
Average	3.31 (3.29)	1.397	.... (1.98)	3.36	....	....	....	− .05	....
Entire preservative period:									
Total	164.59 (167.64)	67.655	.... (107.48)	172.944	41.1	.... (64.1)	105.1	−8.354	19.5
Average	3.36 (3.35)	1.381	.... (2.15)	3.529	....	....	....	− .169	....
After period.									
1903—June 21	3.15	0.936	2.20	3.136	29.7	69.8	99.6	+0.014	....
22	3.62	2.51	2.37	4.88	69.3	65.5	134.8	−1.26	....
23	3.21	1.11	2.36	3.47	34.6	73.5	108.1	− .26	....
24	3.60	1.79	1.99	3.78	49.7	55.3	105.0	− .18	....
25	3.64	(a)	2.17	2.17	....	59.6	59.6	+1.47	....
26	3.54	.508	1.80	2.31	14.4	50.8	65.3	+1.23	....
27	3.37	3.22	2.37	5.59	95.5	70.3	165.9	−2.22	....
28	4.60	1.38	2.19	3.57	30.0	47.6	77.6	+1.03	....
29	3.61	(a)	1.82	1.82	....	50.4	50.4	+1.79	....
Total	32.34	11.454	19.27	30.726	35.4	59.6	95.0	+1.614	....
Average	3.59	1.273	2.14	3.414	....	....	....	+ .176	....

[a] No movement.

TABLE LXV.—*Summary of phosphoric-acid balances for Series V.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	33.17	16.97	19.86	36.83	51.2	59.8	111.0	− 3.66	
No. 3	23.91	9.23	18.19	27.42	38.6	76.1	114.7	− 3.51	
No. 5	32.75		25.04	36.71		76.5	112.1	− 3.96	
	[37.66]	[13.11]			[34.8]				
Total	89.83		63.09	100.96		70.2	112.4	− 11.13	
	[94.74]	[39.31]			[41.5]				
Average	4.28		3.00	4.81				− .53	
	[4.31]	[1.79]							
Preservative period.									
First subperiod:									
No. 1	57.85	29.10	33.96	63.36	50.8	58.7	109.5	− 5.51	6.0
No. 3	41.48		27.75	41.15		66.9	99.2	+ .33	6.0
	[44.73]	[14.67]			[32.8]				
No. 5	58.06	22.60	39.52	62.12	38.9	68.1	107.0	− 4.06	6.0
Total	157.39		101.23	166.63		64.3	105.9	− 9.24	18.0
	[160.64]	[66.47]			[41.4]				
Average	4.50		2.89	4.76				− .26	
	[4.46]	[1.85]							
Second subperiod:									
No. 1	57.26	28.96	33.75	62.71	50.6	58.9	109.5	− 5.45	6.0
No. 3	42.22	15.70	30.39	46.10	37.2	72.0	109.2	− 3.88	6.0
No. 5	53.31	20.90		55.87	39.2		104.8	− 2.56	6.0
	(58.26)		(38.18)			(65.5)			
Total	152.79	65.56		164.68	42.9		107.8	− 11.89	18.0
	(157.74)		(102.32)			(64.9)			
Average	4.37	1.87		4.71				− .31	
	(4.38)		(2.84)						
Subperiods 1 and 2:									
Total	310.18			331.31			106.8	− 21.13	36.0
	(315.13)		(203.55)			(64.6)			
	[313.43]	[132.03]			[42.1]				
Average	4.43			4.73				− .30	
	(4.44)		(2.87)						
	[4.41]	[1.86]							
Third subperiod:									
No. 1	52.57	27.72		58.76	52.7		111.8	− 6.19	6.0
	(57.45)		(33.56)			(58.1)			
No. 3	39.47	14.28		41.78	36.2		105.9	− 2.31	6.0
	(43.00)		(30.19)			(70.2)			
No. 5	51.71	22.30	35.65	57.95	43.1	68.9	112.1	− 6.24	5.5
Total	143.75	64.30		158.49	44.7		110.3	− 14.74	17.5
	(152.16)		(99.40)			(65.3)			
Average	4.23	1.89		4.66				− .43	
	(4.23)		(2.76)						
Subperiods 1, 2, and 3:									
Total	453.93			489.80			107.9	− 35.87	53.5
	(467.29)		(302.95)			(64.8)			
	[457.18]	[196.33]			[43.0]				
Average	4.36			4.71				− .35	
	(4.37)		(2.83)						
	[4.35]	[1.87]							
Fourth subperiod:									
No. 1	68.12	38.83	37.73	76.56	56.8	55.4	111.9	8.44	7.0
No. 3	52.01	18.18	35.14	53.32	35.0	67.6	102.5	1.31	7.0
No. 5	67.45	29.19	43.02	72.21	43.3	63.8	107.1	4.76	7.0
Total	187.88	86.20	115.89	202.09	45.9	61.7	107.6	14.21	21.0
Average	4.47	2.05	2.76	4.81				.34	

TABLE LXV.—*Summary of phosphoric-acid balances for Series V*—Continued.

Three men.—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period—Continued.									
Entire preservative period:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	641.81			691.89			107.8	−50.08	74.5
	(655.17)		(418.84)			(63.9)			
	[645.06]	[282.53]			[43.8]				
Average	4.40			4.74				− .34	
	(4.40)		(2.81)						
	[4.39]	[1.92]							
After period.									
No. 1	40.28	24.31		46.04	60.4		114.3	− 5.76	
	(44.94)		(24.58)			(54.7)			
No. 3	37.68	14.57	23.01	37.58	38.7	61.1	99.7	+ .10	
No. 5	42.52	18.23	26.24	44.47	42.9	61.7	104.6	− 1.95	
Total	120.48	57.11		128.09	47.4		106.3	− 7.61	
	(125.14)		(73.83)			(59.0)			
Average	4.63	2.20		4.93				− .30	
	(4.63)		(2.73)						

Five men.

Period.	1	2	3	4	5	6	7	8	9
Fore period.									
No. 1	33.17	16.97	19.86	36.83	51.2	59.8	111.0	− 3.66	
No. 2	27.11			25.96			95.8	+ 1.15	
	(31.29)		(20.05)			(64.1)			
	[31.66]	[10.70]			[33.8]				
No. 3	23.91	9.23	18.19	27.42	38.6	76.1	114.7	− 3.51	
No. 5	32.75		25.04	36.71		76.5	112.1	− 3.96	
	[37.66]	[13.11]			[34.8]				
No. 6	21.95	7.78	16.47	24.25	35.4	75.0	110.5	− 2.30	
Total	138.89			151.17			108.8	−12.28	
	(143.07)		(99.61)			(69.6)			
	[148.35]	[57.79]			[39.0]				
Average	4.09			4.45				− .36	
	(4.09)		(2.85)						
	[4.12]	[1.61]							
Preservative period.									
First subperiod:									
No. 1	57.85	29.40	33.96	63.35	50.8	58.7	109.5	− 5.50	6.0
No. 2	54.08	21.80	33.40	55.20	40.3	61.8	102.1	− 1.12	6.0
No. 3	41.48		27.75	41.15		66.9	99.2	+ .33	6.0
	[44.73]	[14.67]			[32.8]				
No. 5	58.06	22.60	39.52	62.12	38.9	68.1	107.0	− 4.06	6.0
No. 6	42.14	16.99	26.88	43.87	40.3	63.8	104.1	− 1.73	5.0
Total	253.61		161.51	265.69		63.7	104.8	−12.08	29.0
	[256.86]	[105.46]			[41.1]				
Average	4.30		2.74	4.50				− .20	
	[4.28]	[1.76]							
Second subperiod:									
No. 1	57.26	28.96	33.75	62.71	50.6	58.9	109.5	− 5.45	6.0
No. 2	50.95	20.55	33.58	54.13	40.3	65.9	106.2	− 3.18	6.0
No. 3	42.22	15.70	30.39	46.10	37.2	72.0	109.2	− 3.88	6.0
No. 5	53.31	20.90		55.87	39.2		104.8	− 2.56	6.0
	(58.26)		(38.18)			(65.5)			
No. 6	40.40	16.94	26.94	43.88	41.9	66.7	108.6	− 3.48	6.0
Total	244.14	103.05		262.69	42.2		107.6	−18.55	30.0
	(249.09)		(162.84)			(65.4)			
Average	4.14	1.75		4.45				− .31	
	(4.15)		(2.71)						

TABLE LXV.—*Summary of phosphoric-acid balances for Series V*—Continued.

Five men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period—Continued.									
Subperiods 1 and 2:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	497.75			528.38			106.1	−30.63	59.0
	(502.70)		(324.35)			(64.5)			
	[501.00]	[208.51]			[41.6]				
Average	4.22			4.48				− .26	
	(4.22)		(2.73)						
	[4.21]	[1.75]							
Third subperiod:									
No. 1	52.57	27.72		58.76	52.7		111.8	− 6.19	6.0
	(57.45)		(33.56)			(58.4)			
No. 2	43.52	17.98	29.28	47.26	41.3	67.3	108.6	− 3.74	6.0
No. 3	39.47	14.28		41.78	36.2		105.9	− 2.31	6.0
	(43.00)		(30.19)			(70.2)			
No. 5	51.71	22.30	35.65	57.95	43.1	68.9	112.1	− 6.24	5.5
No. 6	39.03	15.57	25.92	41.48	39.9	66.4	106.3	− 2.45	6.0
Total	226.30	97.85		247.23	43.2		109.2	−20.93	29.5
	(234.71)		(154.60)			(65.9)			
Average	3.90	1.69		4.26				− .36	
	(3.91)		(2.58)						
Subperiods 1, 2, and 3:									
Total	724.05			775.61			107.1	−51.56	88.5
	(737.41)		(478.95)			(65.0)			
	[727.30]	[306.36]			[42.1]				
Average	4.11			4.41				− .30	
	(4.12)		(2.68)						
	[4.11]	[1.74]							

Six men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.									
No. 1	33.17	16.97	19.86	36.83	51.2	59.8	111.0	− 3.66	
No. 2	27.11			25.96			95.8	+ 1.15	
	(31.29)		(20.05)			(64.1)			
	[31.66]	[10.70]			[33.8]				
No. 3	23.91	9.23	18.19	27.42	38.6	76.1	111.7	− 3.51	
No. 4	22.92		20.19	28.50		88.1	124.3	− 5.58	
	[27.58]	[9.14]			[33.1]				
No. 5	32.75		25.04	36.71		76.5	112.1	− 3.96	
	[37.66]	[13.11]			[34.8]				
No. 6	21.95	7.78	16.47	21.25	35.4	75.0	110.5	− 2.30	
Total	161.81			179.67			111.0	−17.86	
	(165.99)		(119.80)			(72.2)			
	[175.93]	[66.93]			[38.0]				
Average	3.95			4.38				− .43	
	(3.95)		(2.85)						
	[4.00]	[1.52]							
Preservative period.									
First subperiod:									
No. 1	57.85	29.40	33.96	63.35	50.8	58.7	109.5	− 5.50	6.0
No. 2	54.08	21.80	33.40	55.20	40.3	61.8	102.1	− 1.12	6.0
No. 3	41.48		27.75	41.15		66.9	99.2	− .33	6.0
	[44.73]	[14.67]			[32.8]				
No. 4	41.78	12.57	32.52	45.08	30.1	77.8	107.9	− 3.30	6.0
No. 5	58.06	22.60	39.52	62.12	38.9	68.1	107.0	− 4.06	6.0
No. 6	42.14	16.99	26.88	43.87	40.3	63.8	104.1	− 1.73	5.0
Total	295.39		194.03	310.77		65.7	105.2	−15.38	35.0
	[298.61]	[118.03]			[39.5]				
Average	4.16		2.73	4.38				− .22	
	[4.15]	[1.64]							

TABLE LXV.—*Summary of phosphoric-acid balances for Series V*—Continued.

Six men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period—Continued.									
Second subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	57.26	28.96	33.75	62.71	50.6	58.9	109.5	− 5.45	6.0
No. 2	50.95	20.55	33.58	54.13	40.3	65.9	106.2	− 3.18	6.0
No. 3	42.22	15.70	30.39	46.10	37.2	72.0	109.2	− 3.88	6.0
No. 4	47.49	16.04	36.43	52.47	33.8	76.7	110.5	− 4.98	6.0
No. 5	53.31	20.90		55.87	39.2		104.8	− 2.56	6.0
	(58.26)		(38.18)			(65.5)			
No. 6	40.40	16.94	26.94	43.88	41.9	66.7	108.6	− 3.48	6.0
Total	291.63	119.09		315.16	40.8		108.1	−23.53	36.0
	(296.58)		(199.27)			(67.2)			
Average	4.11	1.68		4.44				− .33	
	(4.12)		(2.77)						
Subperiods 1 and 2:									
Total	587.02			625.93			106.6	−38.91	71.0
	(591.97)		(393.30)			(66.4)			
	[590.27]	[237.12]			[40.2]				
Average	4.13			4.41				− .28	
	(4.14)		(2.75)						
	[4.13]	[1.66]							

TABLE LXVI.—*General summary of phosphoric-acid balances.*

Period and series.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*
Series I	142.537	49.985		139.687	35.1		98.0	+ 2.85
	(147.158)		(92.579)			(62.9)		
II[a]	61.63	26.14		61.27	42.4		99.4	+ .36
	(78.93)		(44.08)			(55.8)		
III	155.53			145.47			93.5	+10.06
	(159.43)		(94.92)			(59.5)		
	[158.98]	[54.043]			[34.0]			
IV	111.99	35.205		100.38	31.4		89.6	+11.61
	(116.46)		(67.46)			(57.9)		
V	89.83		63.09	100.96		70.2	112.4	−11.13
	[94.74]	[39.31]			[41.5]			
Total	499.887			486.497			97.3	+13.39
	(512.878)		(318.049)			(62.0)		
	[508.247]	[178.543]			[35.1]			
Average	4.463			4.344				+ .119
	(4.460)		(2.766)					
	[4.458]	[1.566]						
Perservative period.								
Series 1	291.433	99.294		289.280	34.1		99.3	+ 2.153
	(299.393)		(194.378)			(64.9)		
II[a]	95.23	38.18		96.36	40.1		101.2	− 1.13
	(104.92)		(63.35)			(60.4)		
III	178.58		121.70	179.21		68.2	100.4	− .63
	[193.35]	[62.047]			[32.1]			
IV	263.53	97.51	160.15	257.67	37.0	60.8	97.8	+ 5.86
V	641.81			691.89			107.8	−50.08
	(655.17)		(418.84)			(63.9)		
	[645.06]	[282.53]			[43.8]			
Total	1,375.353			1,418.050			103.1	−42.697
	(1,396.673)		(895.068)			(64.1)		
	[1,393.373]	[541.381]			[38.9]			
Average	4.298			4.431				− .133
	(4.297)		(2.754)					
	[4.301]	[1.671]						
After period.								
Series 1	224.18	79.229		222.471	35.3		99.2	+ 1.709
	(229.25)		(145.751)			(63.6)		
II[a]								
III	126.51			108.79			86.0	+17.72
	(142.03)		(74.64)			(52.6)		
	[130.53]	[13.38]			[33.2]			
IV	98.13	32.67	60.14	92.81	33.3	61.3	91.6	+ 5.32
V	120.48	57.11		128.09	47.4		106.3	− 7.61
	(125.11)		(73.83)			(59.0)		
Total	569.30			552.161			97.0	+17.139
	(591.55)		(351.361)			(59.6)		
	[573.32]	[212.389]			[37.0]			
Average	4.218			4.121				+ .127
	(4.247)		(2.531)					
	[4.246]	[1.573]						

[a] This series is not included in total; all members ill in the after period.

FAT TABLES.

TABLE LXVII.—*Fat balances for Series II.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Jan. 21 [a]	131.11	9.19	7.0	121.92	....
22	129.26	5.04	3.9	124.22	....
23	148.42	6.77	4.6	141.65	....
24	137.57	4.11	3.0	133.46	....
25	133.76	6.18	4.6	127.58	....
26	131.44	4.44	3.4	127.00	....
27	138.45	6.17	4.5	132.28	....
Total	950.01	41.90	4.4	908.11	....
Average	135.72	5.96	....	129.76	....
Preservative period.					
First subperiod:					
1903—Jan. 28	139.50	14.40	10.3	125.10	1.0
29	157.16	3.55	2.3	153.61	1.0
30	132.44	7.92	6.0	124.52	1.0
31	124.66	12.91	10.4	111.75	1.0
Total	553.76	38.88	7.0	514.88	4.0
Average	138.44	9.72	....	128.72	....
Second subperiod:					
1903—Feb. 1	129.78	(b)	....	129.78	2.0
2	110.81	15.72	14.2	95.09	2.0
3	144.00	6.94	4.8	137.06	2.0
4	125.75	6.43	5.1	119.32	2.0
Total	510.34	29.09	5.7	481.25	8.0
Average	127.58	7.27	....	120.31	....
Third subperiod:					
1903—Feb. 5	126.20	8.45	6.7	117.75	3.0
6	96.20	6.08	6.3	90.12	3.0
7	141.09	9.79	6.9	131.30	3.0
8	113.96	8.25	7.2	105.71	3.0
Total	477.45	32.57	6.8	444.88	12.0
Average	119.36	8.14	....	111.22	....
Subperiods 1, 2, and 3:					
Total	1,541.55	100.54	6.5	1,441.01	24.0
Average	128.46	8.38	....	120.08	....
Fourth subperiod:					
1903—Feb. 9	121.28	5.38	4.4	115.90	4.0
10	127.97	8.21	6.4	119.76	4.5

No. 8.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.					
1903—Jan. 21 [a]	150.35	10.59	7.0	139.76	....
22	130.86	3.54	2.7	127.32	....
23	148.90	(b)	....	148.90	....
24	170.40	7.76	4.6	162.64	....
25	110.06	8.78	8.0	101.28	....
26	127.60	5.78	4.5	121.82	....
27	144.61	(b)	....	144.61	....
Total	982.78	36.45	3.7	946.33	....
Average	140.40	5.21	....	135.19	....

[a] Data not obtained for January 19 and 20, the first two days of the fore period.
[b] No movement.

TABLE LXVII.—*Fat balances for Series II*—Continued.

No. 8—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1—2)	5 Boric acid administered.
Preservative period.					
First subperiod:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Jan. 28	121.64	8.03	6.6	113.61	1.0
29	130.83	12.20	9.3	118.63	1.0
30	123.63	(*a*)	....	123.63	1.0
31	135.61	7.44	5.5	128.17	1.0
Total	511.71	27.67	5.4	485.04	4.0
Average	127.93	6.92	....	121.01	....
Second subperiod:					
1903—Feb. 1	125.43	8.10	6.5	117.33	2.0
2	121.70	8.13	6.7	113.57	2.0
3	....	Discarded.	....	....	.0
4	....	Discarded.	....	....	.0
Total	247.13	16.23	6.6	230.90	4.0
Average	123.56	8.13	....	115.43	....
Subperiods 1 and 2:					
Total	758.84	43.93	5.1	714.91	8.0
Average	126.47	7.32	....	119.15	....

No. 9.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1—2)	5 Boric acid administered.
Fore period.					
1903—Jan. 21 *b*	132.32	7.04	5.3	125.28	....
22	117.64	1.34	1.1	116.30	....
23	133.45	6.04	4.5	127.41	....
24	147.51	(*a*)	....	147.51	....
25	119.53	8.25	6.9	111.28	....
26	120.47	8.99	7.5	111.48	....
27	....	Discarded.	....	....	....
Total	770.92	31.63	4.1	739.29	....
Average	128.48	5.27	....	123.21	....
Preservative period.					
First subperiod:					
1903—Jan. 28	38.20	8.48	22.2	29.72	1.0
29	114.82	6.83	5.9	107.99	1.0
30	108.21	5.76	5.3	102.45	1.0
31	....	Lost.	....	....	1.0
Total	261.23	21.07	8.1	240.16	4.0
Average	87.08	7.02	....	80.06	....

No. 10.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1—2)	5 Boric acid administered.
Fore period.					
1903—Jan. 21 *b*	176.11	4.60	2.6	171.51	....
22	162.88	6.53	4.0	156.35	....
23	170.10	8.14	4.8	161.96	....
24	175.77	7.37	4.1	168.40	....
25	143.27	8.33	5.8	134.94	....
26	151.26	11.44	7.6	139.82	....
27	150.22	6.59	4.4	143.63	....
Total	1,129.61	53.00	4.7	1,076.61	....
Average	161.38	7.57	....	153.81	....
Preservative period.					
First subperiod.					
1903—Jan. 28	145.66	7.28	5.0	138.38	1.0
29	....	Discarded.	....	....	1.0
30	175.29	7.40	4.2	167.89	1.0
31	....	Discarded.	....	....	1.0
Total	320.95	14.68	4.6	306.27	4.0
Average	160.48	7.34	....	153.14	....

a No movement.

b Data not obtained for January 19 and 20, the first two days of the fore period.

TABLE LXVII.—*Fat balances for Series II*—Continued.

NO. 10—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Preservative period—Continued.					
Second subperiod:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 1	172.75	13.20	7.6	159.55	2.0
2	168.99	5.81	3.4	163.18	2.0
3	149.06	7.27	4.9	141.79	2.0
4	143.80	11.49	8.0	132.31	2.0
Total	634.60	37.77	6.0	596.83	8.0
Average	158.65	9.44	....	149.21	....
Third subperiod:					
1903—Feb. 5	156.83	15.01	9.6	141.82	3.0
6	120.87	(a)	....	120.87	3.0
7	169.11	15.07	8.9	154.04	3.0
8	116.70	(a)	....	116.70	3.0
Total	563.51	30.08	5.3	533.43	12.0
Average	140.88	7.52	....	133.66	....
Subperiods 1, 2, and 3:					
Total	1,519.06	82.53	5.4	1,436.53	24.0
Average	151.91	8.25	....	143.66	....
Fourth subperiod:					
1903—Feb. 9	....	8.33	....	....	4.0
10	....	Discarded.	....	....	4.0
Total	....	8.33	....	....	8.0
Average	....	....	....	....	....

NO. 11.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.					
1903—Jan. 21 [b]	137.23	6.05	4.4	131.18	....
22	123.96	9.25	7.5	114.71	....
23	145.31	14.14	9.7	131.17	....
24	141.80	14.14	10.0	127.66	....
25	129.56	3.42	2.6	126.14	....
26	116.47	5.43	4.7	111.04	....
27	131.12	6.08	4.6	125.04	....
Total	925.45	58.51	6.3	866.94	....
Average	132.21	8.36	....	123.85	....
Preservative period.					
First subperiod:					
1903—Jan. 28	132.60	4.24	3.2	128.36	1.0
29	128.91	5.40	4.2	123.51	1.0
30	123.56	4.71	3.8	118.85	1.0
31	121.97	7.30	6.0	114.67	1.0
Total	507.04	21.65	4.3	485.39	4.0
Average	126.76	5.41	....	121.35	....
Second subperiod:					
1903—Feb. 1	141.00	2.98	2.1	138.02	2.0
2	129.80	1.05	.8	128.75	2.0
3	....	Discarded.	....	....	.0
4	42.67	5.07	11.9	37.60	.0
Total	313.47	9.10	2.9	304.37	4.0
Average	104.49	3.03	....	101.46	....
Subperiods 1 and 2:					
Total	820.51	30.75	3.7	789.76	8.0
Average	117.22	4.39	....	112.83	....

[a] No movement.
[b] Data not obtained for January 19 and 20, the first two days of the fore period.

TABLE LXVII.—*Fat balances for Series II*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Jan. 21 [a]	133.43	4.52	3.4	128.91	....
22	141.76	4.97	3.5	136.79	....
23	134.14	5.26	3.9	128.88	....
24	154.87	([b])	....	154.87	....
25	135.15	5.34	4.0	129.81	....
26	125.26	9.32	7.4	115.94	....
27	128.31	3.13	2.4	125.18	....
Total	952.92	32.54	3.4	920.38	....
Average	136.13	4.65	....	131.68	....
Preservative period.					
First subperiod:					
1903—Jan. 28	132.74	5.78	4.4	126.96	1.0
29	141.96	5.72	4.0	136.24	1.0
30	134.93	5.21	3.9	129.72	1.0
31	144.51	9.82	6.8	134.69	1.0
Total	554.14	26.53	4.8	527.61	4.0
Average	138.54	6.63	....	131.91	....
Second subperiod:					
1903—Feb. 1	133.22	6.00	4.5	127.22	2.0
2	129.94	8.43	6.5	121.51	2.0
3	88.90	1.66	1.9	87.24	2.0
4	108.85	3.33	3.1	105.52	2.0
Total	460.91	19.42	4.2	441.49	8.0
Average	115.23	4.86	....	110.37	....
Third subperiod:					
1903—Feb. 5	109.99	5.10	4.6	104.89	3.0
6	69.19	2.04	2.9	67.15	.0
7	41.42	3.80	9.2	37.62	.0
8	17.95	3.53	19.7	14.42	.0
Total	238.55	14.47	6.1	221.08	3.0
Average	59.64	3.62	....	56.02	....
Subperiods 1, 2, and 3:					
Total	1,253.60	60.42	4.8	1,193.18	15.0
Average	104.47	5.04	....	99.43	....

[a] Data not obtained for January 19 and 20, the first two days of the fore period.
[b] No movement.

TABLE LXVIII.—*Summary of fat balances for Series II.*

Two men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 7	950.01	41.90	4.4	908.11	....
No. 10	1,129.64	53.00	4.7	1,076.64	....
Total	2,079.65	94.90	4.6	1,984.75	....
Average	148.55	6.78	....	141.77	....
Preservative period.					
First subperiod:					
No. 7	553.76	38.88	7.0	514.88	4.0
No. 10	320.95	14.68	4.6	306.27	4.0
Total	874.57	53.56	6.1	821.15	8.0
Average	145.78	8.93	....	136.85	....

TABLE LXVIII.—*Summary of fat balances for Series II*—Continued.

Two men—Continued.

Period.	1 In food.	2 In feces.	2 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Preservative period—Continued.					
Second subperiod:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 7	510.34	29.09	5.7	481.25	8.0
No. 10	634.60	37.77	6.0	596.83	8.0
Total	1,144.94	66.86	5.8	1,078.08	16.0
Average	143.12	8.36	...	134.76	...
Third subperiod:					
No. 7	477.45	32.57	6.8	444.88	12.0
No. 10	563.51	30.08	5.3	533.43	12.0
Total	1,040.96	62.65	6.0	978.31	24.0
Average	130.12	7.83	...	122.29	...
Subperiods 1, 2, and 3:					
Total	3,060.61	183.07	6.0	2,877.54	48.0
Average	139.12	8.32	...	130.80	...

Three men.

Period.	In food.	In feces.	In feces. (2÷1)	Balance. (1−2)	Boric acid administered.
Fore period.					
No. 7	950.01	41.90	4.4	908.11	...
No. 10	1,129.64	53.00	4.7	1,076.64	...
No. 12	952.92	32.54	3.4	920.38	...
Total	3,032.57	127.44	4.2	2,905.13	...
Average	144.41	6.07	...	138.34	...
Preservative period.					
First subperiod:					
No. 7	553.76	38.88	7.0	514.88	4.0
No. 10	320.95	14.68	4.6	306.27	4.0
No. 12	554.14	26.53	4.8	527.61	4.0
Total	1,428.85	80.09	5.6	1,348.76	12.0
Average	142.89	8.01	...	134.88	...
Second subperiod:					
No. 7	510.34	29.09	5.7	481.25	8.0
No. 10	634.60	37.77	6.0	596.83	8.0
No. 12	460.91	19.42	4.2	441.49	8.0
Total	1,605.85	86.28	5.4	1,519.57	24.0
Average	133.82	7.19	...	126.63	...
Subperiods 1 and 2:					
Total	3,034.70	166.37	5.5	2,868.33	36.0
Average	137.94	7.56	...	130.38	...
Third subperiod:					
No. 7	477.45	32.57	6.8	444.88	12.0
No. 10	563.51	30.08	5.3	533.43	12.0
No. 12	238.55	14.47	6.1	224.08	3.0
Total	1,279.51	77.12	6.0	1,202.39	27.0
Average	106.63	6.43	...	100.20	...
Subperiods 1, 2, and 3:					
Total	4,314.21	243.49	5.6	4,070.72	63.0
Average	126.89	7.16	...	119.73	...

Table LXIX.—*Fat balances for Series III.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 19	125.23	11.77	9.4	113.46	....
20	131.69	9.26	7.0	122.43	....
21	120.56	5.87	4.9	114.69	....
22	109.36	8.47	7.7	100.89	....
23	106.70	7.13	6.7	99.57	....
24	100.49	7.87	7.8	92.62	....
25	133.26	4.92	3.7	128.34	....
26	136.69	9.12	6.7	127.57	....
27	139.63	14.85	10.6	124.78	....
Total	1,103.61	79.26	7.2	1,024.35	....
Average	122.62	8.81	....	113.81	....
Preservative period.					
First subperiod:					
1903—Feb. 28	141.39	3.62	2.6	137.77	1.0
Mar. 1	144.87	15.13	10.4	129.74	1.0
2	149.96	9.31	6.2	140.65	1.0
3	152.57	7.86	5.2	144.71	1.0
Total	588.79	35.92	6.1	552.87	4.0
Average	147.20	8.98	....	138.22	....
Second subperiod:					
1903—Mar. 4	180.01	6.90	3.8	173.11	4.0
5	129.89	10.82	8.3	119.07	4.0
6	135.84	10.14	7.5	125.70	2.0
7	148.25	5.82	3.9	142.43	2.0
Total	593.99	33.68	5.7	560.31	12.0
Average	148.50	8.42	....	140.08	....
Third subperiod:					
1903—Mar. 8	135.93	3.34	2.5	132.59	3.0
9	151.93	3.00	2.0	148.93	2.0
10	145.92	4.52	3.1	141.40	3.0
11	116.15	1.17	1.0	114.98	2.0
Total	549.93	12.03	2.2	537.90	10.0
Average	137.48	3.01	....	134.47	....
Entire preservative period:					
Total	1,732.71	81.63	4.7	1,651.08	26.0
Average	144.39	6.80	....	137.59	....
After period.					
1903—Mar. 12	99.94	5.09	5.1	94.85	....
13	138.02	4.86	3.5	133.16	....
14	145.86	6.10	4.2	139.76	....
15	115.58	4.43	3.8	111.15	....
16	157.34	3.40	2.2	153.94	....
17	143.25	6.04	4.2	137.21	....
18	167.37	6.35	3.8	161.02	....
19	146.41	4.48	3.1	141.93	....
Total	1,113.77	40.75	3.7	1,073.02	....
Average	139.22	5.09	....	134.13	....

TABLE LXIX.—*Fat balances for Series III*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 19	120.05	6.16	5.1	113.89	....
20	128.51	5.04	3.9	123.47	....
21	112.06	3.60	3.2	108.46	....
22	104.29	5.75	5.5	98.54	....
23	108.39	4.54	4.2	103.85	....
24	104.14	2.53	2.4	101.61	....
25	119.64	4.44	3.7	115.20	....
26	104.34	5.98	5.7	98.36	....
27	130.79	5.45	4.2	125.34	....
Total	1,032.21	43.49	4.2	988.72	....
Average	114.69	4.83	....	109.86	....
Preservative period.					
First subperiod:					
1903—Feb. 28	123.04	5.29	4.3	117.75	1.0
Mar. 1	113.97	4.55	4.0	109.42	1.0
2	132.56	4.14	3.1	128.42	1.0
3	138.67	3.75	2.7	134.92	1.0
Total	508.24	17.73	3.5	490.51	4.0
Average	127.06	4.43	....	122.63	....
Second subperiod:					
1903—Mar. 4	163.29	1.98	1.2	161.31	4.0
5	61.33	.77	1.3	60.56	2.0
6	83.09	(a)	....	83.09	.0
7	89.59	(a)	....	89.59	1.0
Total	397.30	2.75	.7	394.55	7.0
Average	99.32	1.38	....	97.94	....
Third subperiod:					
1903—Mar. 8	35.83	2.65	7.4	33.18	0.0
9	59.43	2.68	4.5	56.75	.0
10	93.75	1.50	1.6	92.25	.0
11	124.53	1.79	1.4	122.74	.0
Total	313.54	8.62	2.7	304.92	.0
Average	78.38	2.15	....	76.23	....
Entire preservative period:					
Total	1,219.08	29.10	2.4	1,189.98	11.0
Average	101.59	2.41	....	99.16	....
After period.					
1903—Mar. 12	115.73	3.27	2.8	112.46	....
13	93.99	2.40	2.6	91.59	....
14	113.60	3.07	2.7	110.53	....
15	112.30	2.24	2.0	110.06	....
16	144.56	3.40	2.4	141.16	....
17	144.18	3.28	2.3	140.90	....
18	168.06	2.87	1.7	165.19	....
19	146.34	1.34	.9	145.00	....
Total	1,038.76	21.87	2.1	1,016.89	....
Average	129.84	2.73	....	127.11	....

[a] No movement.

TABLE LXIX.—*Fat balances for Series III*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 19	96.07	6.31	6.6	89.76	....
20	90.34	2.45	2.7	87.89	....
21	97.70	4.05	4.1	93.65	....
22	82.45	4.75	5.8	77.70	....
23	84.05	6.81	8.1	77.24	....
24	80.79	2.16	2.7	78.63	....
25	100.63	4.14	4.1	96.49	....
26	89.57	5.06	5.9	84.51	....
27	88.41	3.59	4.1	84.82	....
Total	810.01	39.32	4.9	770.69	....
Average	90.00	4.37	....	85.63	....
Preservative period.					
First subperiod:					
1903—Feb. 28	92.11	3.03	3.3	89.08	1.0
Mar. 1	88.63	4.19	4.7	84.44	1.0
2	....	Lost.	....	....	1.0
3	101.65	3.80	3.7	97.85	1.0
Total	282.39	11.02	3.9	271.37	4.0
Average	94.13	3.67	....	90.46	....
Second subperiod:					
1903—Mar. 4	121.51	6.37	5.2	115.14	4.0
5	93.46	1.70	1.8	91.76	4.0
6	84.51	7.10	8.4	77.41	2.0
7	83.90	4.84	5.8	79.06	2.0
Total	383.38	20.01	5.2	363.37	12.0
Average	95.84	5.00	....	90.84	....
Third subperiod:					
1903—Mar. 8	88.86	1.68	1.9	87.18	3.0
9	75.26	5.13	6.8	70.13	3.0
10	69.06	2.13	3.1	66.93	2.0
11	91.37	1.34	1.5	90.03	3.0
Total	324.55	10.28	3.2	314.27	11.0
Average	81.14	2.57	....	78.57	....
Entire preservative period:					
Total	990.32	41.31	4.2	949.01	27.0
Average	90.03	3.76	....	86.27	....
After period.					
1903—Mar. 12	54.36	4.58	8.4	49.78	....
13	60.87	2.17	3.6	58.70	....
14	49.24	4.26	8.7	44.98	....
15	54.63	1.85	3.4	52.78	....
16	71.66	2.42	3.4	69.24	....
17	....	Lost.	....	....	....
18	80.88	4.03	5.0	76.85	....
19	50.82	4.38	8.6	46.44	....
Total	422.46	23.69	5.6	398.77	....
Average	60.35	3.38	....	56.97	....

TABLE LXIX.—*Fat balances for Series III*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 19	Absent.				
20	113.74	3.80	3.3	109.94	
21	107.51	2.02	1.9	105.49	
22		Lost.			
23	115.54	2.17	1.9	113.37	
24	106.66	4.20	3.9	102.46	
25	139.66	4.37	3.1	135.29	
26	111.60	4.83	4.3	106.77	
27	127.72	3.29	2.6	124.43	
Total	822.43	24.68	3.0	797.75	
Average	117.49	3.53		113.96	
Preservative period.					
First subperiod:					
1903—Feb. 28	102.33	3.51	3.4	98.82	1.0
Mar. 1	102.42	6.24	6.1	96.18	1.0
2	125.41	3.13	2.5	122.28	1.0
3	138.98	4.78	3.4	134.20	1.0
Total	469.14	17.66	3.8	451.48	4.0
Average	117.28	4.42		112.87	
Second subperiod:					
1903—Mar. 4	147.42	4.29	2.9	143.13	4.0
5	107.79	5.59	5.2	102.20	4.0
6	93.15	3.17	3.4	89.98	2.0
7	85.59	4.96	5.8	80.63	2.0
Total	433.95	18.01	4.2	415.94	12.0
Average	108.49	4.50		103.99	
Third subperiod:					
1903—Mar. 8	99.35	3.53	3.6	95.82	3.0
9	78.79	2.80	3.6	75.99	1.7
10	90.11	4.52	5.0	85.59	3.0
11	56.78	4.23	7.4	52.55	2.0
Total	325.03	15.08	4.6	309.95	9.7
Average	81.26	3.77		77.49	
Entire preservative period:					
Total	1,228.12	50.75	4.1	1,177.37	25.7
Average	102.34	4.23		98.11	
After period.					
1903—Mar. 12		Lost.			
13		Lost.			
14	70.34	(*a*)		70.34	
15	61.52	3.91	6.4	57.61	
16	91.82	3.42	3.7	88.40	
17	71.94	2.24	3.1	69.70	
18	107.03	2.75	2.6	104.28	
19		Discarded.			
Total	402.65	12.32	3.1	390.33	
Average	80.53	2.46		78.07	

[a] No movement.

TABLE LXIX.—*Fat balances for Series III*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 19	134.02	3.59	2.7	130.43	....
20	127.01	1.87	1.5	125.14	....
21	129.15	3.01	2.3	126.14	....
22	115.04	14.04	12.2	101.00	....
23	99.52	7.70	7.7	91.82	....
24	107.96	3.00	2.8	104.96	....
25	130.39	5.12	3.9	125.27	....
26	119.21	11.04	9.3	108.17	....
27	131.85	1.84	1.4	130.01	....
Total	1,094.15	51.21	4.7	1,042.94	....
Average	121.57	5.69	....	115.88	....
Preservative period.					
First subperiod:					
1903—Feb. 28	123.83	9.22	7.4	114.61	1.0
Mar. 1	123.80	.70	.6	123.10	1.0
2	133.61	6.57	4.9	127.04	1.0
3	135.74	10.16	7.5	125.58	1.0
Total	516.98	26.65	5.2	490.33	4.0
Average	129.24	6.66	....	122.58	....
Second subperiod:					
1903—Mar. 4	172.04	4.74	2.8	167.30	4.0
5	124.72	3.35	2.7	121.37	4.0
6	108.59	7.74	7.1	100.85	2.0
7	124.00	4.52	3.6	119.48	2.0
Total	529.35	20.35	3.8	509.00	12.0
Average	132.34	5.09	....	127.25	....
Third subperiod:					
1903—Mar. 8	107.18	3.61	3.4	103.57	3.0
9	112.39	1.00	.9	111.39	3.0
10	75.56	2.07	2.7	73.49	2.2
11	98.87	.82	.8	98.05	3.0
Total	394.00	7.50	1.9	386.50	11.2
Average	98.50	1.88	....	96.62	....
Entire preservative period:					
Total	1,440.33	54.50	3.8	1,385.83	27.2
Average	120.03	4.54	....	115.49	....
After period.					
1903—Mar. 12	80.11	6.34	7.9	73.77	....
13	108.36	4.05	3.7	104.31	....
14	121.73	5.44	4.5	116.29	....
15	113.24	....	....	....	....
16	138.94	3.61	2.6	135.33	....
17	117.26	5.57	4.8	111.69	....
18	172.14	1.09	.6	171.05	....
19	134.18	4.02	3.0	130.16	....
Total	985.96	30.12	3.1	955.84	....
Average	123.24	4.30	....	118.94	....

TABLE LXIX.—*Fat balances for Series III*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Feb. 19	102.04	(a)	....	102.04	....
20	83.59	1.92	2.3	81.67	....
21	104.97	10.50	10.0	94.47	....
22	92.36	4.85	5.3	87.51	....
23	100.27	(a)	....	100.27	....
24	108.80	3.23	3.0	105.57	....
25	123.32	3.94	3.2	119.38	....
26	101.41	5.07	5.0	96.34	....
27	113.16	(a)	....	113.16	....
Total	929.92	29.51	3.2	900.41	....
Average	103.32	3.28	....	100.05	....
Preservative period.					
First subperiod:					
1903—Feb. 28	68.27	6.33	9.3	61.94	1.0
Mar. 1	74.10	7.05	9.5	67.05	.0
2	76.15	5.40	7.1	70.75	.0
3	115.32	2.71	2.3	112.61	.0
Total	333.84	21.49	6.4	312.35	1.0
Average	83.46	5.37	....	78.09	....
Second subperiod:					
1903—Mar. 4	137.38	4.93	3.6	132.45	0.0
5	100.93	8.31	8.2	92.62	.0
6	107.13	5.53	5.2	101.60	1.0
7	115.24	5.12	4.4	110.12	2.0
Total	460.68	23.89	5.2	436.79	3.0
Average	115.17	5.97	....	109.20	....
Third subperiod:					
1903—Mar. 8	110.26	5.24	4.8	105.02	3.0
9	115.83	3.83	3.3	112.00	3.0
10	103.01	(a)	....	103.01	3.0
11	123.47	4.84	3.9	118.63	3.0
Total	452.57	13.91	3.1	438.66	12.0
Average	113.14	3.48	....	109.66	....
Entire preservative period:					
Total	1,247.09	59.29	4.8	1,187.80	16.0
Average	103.92	4.94	....	98.98	....
After period.					
1903—Mar. 12	107.22	6.14	5.7	101.08	....
13	103.12	5.44	5.3	97.68	....
14	108.48	2.27	2.1	106.21	....
15	116.10	4.67	4.0	111.43	....
16	133.09	5.08	3.8	128.01	....
17	112.22	5.33	4.7	106.89	....
18	128.79	8.80	6.8	119.99	....
19	....	Lost.	....	....	....
Total	809.02	37.73	4.7	771.29	....
Average	115.57	5.39	....	110.18	....

[a] No movement.

TABLE LXX.—*Summary of fat balances for Series III.*

Four men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 1	1,103.61	79.26	7.2	1,024.35	....
No. 3	810.01	39.32	4.9	770.69	....
No. 4	822.43	24.68	3.0	797.75	....
No. 5	1,094.15	51.21	4.7	1,042.94	....
Total	3,830.20	194.47	5.1	3,635.73	....
Average	112.65	5.72	....	106.93	....
Preservative period.					
First subperiod:					
No. 1	588.79	35.92	6.1	552.87	4.0
No. 3	282.39	11.02	3.9	271.37	4.0
No. 4	469.14	17.66	3.8	451.48	4.0
No. 5	516.98	26.65	5.2	490.33	4.0
Total	1,857.30	91.25	4.9	1,766.05	16.0
Average	123.82	6.08	....	117.74	....
Second subperiod:					
No. 1	593.99	33.68	5.7	560.31	12.0
No. 3	383.38	20.01	5.2	363.37	12.0
No. 4	433.95	18.01	4.2	415.94	12.0
No. 5	529.35	20.35	3.8	509.00	12.0
Total	1,940.67	92.05	4.7	1,848.62	48.0
Average	121.29	5.75	....	115.54	....
Third subperiod:					
No. 1	549.93	12.03	2.2	537.90	10.0
No. 3	324.55	10.28	3.2	314.27	11.0
No. 4	325.03	15.08	4.6	309.95	9.7
No. 5	394.00	7.50	1.9	386.50	11.2
Total	1,593.51	44.89	2.8	1,548.62	41.9
Average	99.59	2.81	....	96.78	....
Entire preservative period:					
No. 1	1,732.71	81.63	4.7	1,651.08	26.0
No. 3	990.32	41.31	4.2	949.01	27.0
No. 4	1,228.12	50.75	4.1	1,177.37	25.7
No. 5	1,440.33	54.50	3.8	1,385.83	27.2
Total	5,391.48	228.19	4.2	5,163.29	105.9
Average	114.71	4.86	....	109.85	....
After period.					
No. 1	1,113.77	40.75	3.7	1,073.02	....
No. 3	422.46	23.69	5.6	398.77	....
No. 4	402.65	12.32	3.1	390.33	....
No. 5	985.96	30.12	3.1	955.84	....
Total	2,924.84	106.88	3.7	2,817.96	....
Average	104.46	3.82	....	100.64	....

TABLE LXX.—*Summary of fat balances for Series III*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 1	1,103.61	79.26	7.2	1,024.35	....
No. 2	1,032.21	43.49	4.2	988.72	....
No. 3	810.01	39.32	4.9	770.69	....
No. 4	822.43	24.68	3.0	797.75	....
No. 5	1,094.15	51.21	4.7	1,042.94	....
Total	4,862.41	237.96	4.9	4,624.45	....
Average	113.08	5.53	....	107.55	....
Preservative period.					
First subperiod:					
No. 1	588.79	35.92	6.1	552.87	4.0
No. 2	508.24	17.73	3.5	490.51	4.0
No. 3	282.39	11.02	3.9	271.37	4.0
No. 4	469.14	17.66	3.8	451.48	4.0
No. 5	516.98	26.65	5.2	490.33	4.0
Total	2,365.54	108.98	4.6	2,256.56	20.0
Average	124.50	5.74	....	118.76	....
Second subperiod:					
No. 1	593.99	33.68	5.7	560.31	12.0
No. 2	397.30	2.75	.7	394.55	7.0
No. 3	383.38	20.01	5.2	363.37	12.0
No. 4	433.95	18.01	4.2	415.94	12.0
No. 5	529.35	20.35	3.8	509.00	12.0
Total	2,337.97	94.80	4.1	2,243.17	55.0
Average	116.90	4.74	....	112.16	....
Third subperiod:					
No. 1	549.93	12.03	2.2	537.90	10.0
No. 2	313.54	8.62	2.7	304.92	.0
No. 3	324.55	10.28	3.2	314.27	11.0
No. 4	325.03	15.08	4.6	309.95	9.7
No. 5	394.00	7.50	1.9	386.50	11.2
Total	1,907.05	53.51	2.8	1,853.54	41.9
Average	95.35	2.68	....	92.67	....
Entire preservative period:					
No. 1	1,732.71	81.63	4.7	1,651.08	26.0
No. 2	1,219.08	29.10	2.4	1,189.98	11.0
No. 3	990.32	41.31	4.2	949.01	27.0
No. 4	1,228.12	50.75	4.1	1,177.37	25.7
No. 5	1,440.33	54.50	3.8	1,385.83	27.2
Total	6,610.56	257.29	3.9	6,353.27	116.9
Average	112.04	4.36	....	107.68	....

TABLE LXXI.—*Fat balances for Series IV.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Mar. 20	95.36	5.13	5.4	90.23	....
21	123.81	6.92	5.6	116.89	....
22	101.31	5.63	5.6	95.68	....
23	134.80	4.37	3.2	130.43	....
24	110.27	5.01	4.5	105.26	....
25	127.59	3.45	2.7	124.14	....
26	111.75	9.15	8.2	102.60	....
27	121.86	2.99	2.4	118.87	....
Total	926.75	42.65	4.6	884.10	....
Average	115.84	5.33	....	110.51	....
Preservative period.					
First subperiod:					
1903—Mar. 28	102.94	5.41	5.3	97.53	0.5
29	106.49	8.28	7.8	98.21	.5
30	115.24	6.35	5.5	108.89	.5
31	112.77	4.55	4.0	108.22	.5
Total	437.44	24.59	5.6	412.85	2.0
Average	109.36	6.15	....	103.21	....
Second subperiod:					
1903—Apr. 1	126.39	(b)	....	126.39	1.0
2 [a]	....	....	....	....	....

[a] Observations discontinued. [b] No movement.

TABLE LXXI.—*Fat balances for Series IV*—Continued.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Mar. 20	133.01	0.80	0.6	132.21	....
21	118.97	3.34	2.8	115.63	....
22	121.40	2.18	1.8	119.22	....
23	....	Lost.	....	....	....
24	128.28	(a)	....	128.28	....
25	145.84	5.21	3.6	140.63	....
26	133.65	4.57	3.4	129.08	....
27	141.21	(a)	....	141.21	....
Total	922.36	16.10	1.7	906.26	....
Average	131.77	2.30	....	129.47	....
Preservative period.					
First subperiod:					
1903—Mar. 28	123.19	3.27	2.7	119.92	0.5
29	125.53	6.34	5.1	119.19	.5
30	139.62	6.54	4.7	133.08	.5
31	128.44	4.21	3.3	124.23	.5
Total	516.78	20.36	3.9	496.42	2.0
Average	129.19	5.09	....	124.10	....
Second subperiod:					
1903—Apr. 1	155.96	(a)	....	155.96	1.0
2	117.33	6.78	5.8	110.55	1.0
3	136.99	2.95	2.2	134.04	1.0
4	119.54	6.11	5.1	113.43	1.0
Total	529.82	15.84	3.0	513.98	4.0
Average	132.45	3.96	....	128.49	....
Subperiods 1 and 2:					
Total	1,046.60	36.20	3.5	1,010.40	6.0
Average	130.82	4.52	....	126.28	....
Third subperiod:					
1903—Apr. 5	103.43	(a)	....	103.43	1.0
6	139.54	3.12	2.2	136.42	1.0
7	126.38	4.92	3.9	121.46	1.0
8	161.44	4.38	2.7	157.06	1.0
9	117.74	3.45	2.9	114.29	1.0
Total	648.53	15.87	2.4	632.66	5.0
Average	129.71	3.17	....	126.53	....
Subperiods 1, 2, and 3:					
Total	1,695.13	52.07	3.1	1,643.06	11.0
Average	130.39	4.01	....	126.39	....
Fourth subperiod:					
1903—Apr. 10	124.41	3.62	2.9	120.79	2.0
11	125.03	3.31	2.6	121.72	2.0
12	102.18	5.24	5.1	96.94	2.0
13	159.79	3.09	1.9	156.70	2.0
14	113.48	3.68	3.2	109.80	3.0
Total	624.89	18.94	3.0	605.95	11.0
Average	124.98	3.79	....	121.19	....
Entire preservative period:					
Total	2,320.02	71.01	3.1	2,249.01	22.0
Average	128.89	3.94	....	124.94	....
After period.					
1903—Apr. 15	150.06	2.94	2.0	147.12	....
16	120.13	3.60	3.0	116.53	....
17	119.93	4.27	3.6	115.66	....
18	115.03	2.65	2.3	112.38	....
19	87.08	5.00	5.7	82.08	....
20	118.44	4.95	4.2	113.49	....
21	119.22	(a)	....	119.22	....
22	162.89	6.58	4.0	156.31	....
Total	992.78	29.99	3.0	962.79	....
Average	124.10	3.75	....	120.35	....

a No movement.

TABLE LXXI.—*Fat balances for Series IV*—Continued.

No. 9.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Mar. 20	91.06	5.46	6.0	85.60	....
21	103.02	2.86	2.8	100.16	....
22	86.53	5.41	6.3	81.12	....
23	115.41	4.60	4.0	110.81	....
24	71.29	3.75	5.3	67.54	....
25	104.96	3.75	3.6	101.21	....
26	93.13	4.45	4.8	88.68	....
27	101.98	2.34	2.3	99.64	....
Total	767.38	32.62	4.3	734.76	....
Average	95.92	4.08	....	91.84	....
Preservative period.					
First subperiod:					
1903—Mar. 28	80.41	4.07	5.1	76.34	0.5
29	85.10	4.51	5.3	80.59	.5
30	93.78	3.93	4.2	89.85	.5
31	89.77	3.87	4.3	85.90	.5
Total	349.06	16.38	4.7	332.68	2.0
Average	87.26	4.10	....	83.16	....
Second subperiod:					
1903—Apr. 1	108.31	3.64	3.4	104.67	1.0
2	75.36	(a)	....	75.36	1.0
3	101.14	6.09	6.0	95.05	1.0
4	85.26	(a)	....	85.26	1.0
Total	370.07	9.73	2.6	360.34	4.0
Average	92.52	2.43	....	90.09	....
Subperiods 1 and 2:					
Total	719.13	26.11	3.6	693.02	6.0
Average	89.89	3.26	....	86.63	....
Third subperiod:					
1903—Apr. 5	72.91	3.87	5.3	69.04	1.0
6	101.24	5.26	5.2	95.98	1.0
7	86.28	3.43	4.0	82.85	1.0
8	116.39	5.80	5.0	110.59	1.0
9	79.93	1.86	2.3	78.07	1.0
Total	456.75	20.22	4.4	436.53	5.0
Average	91.35	4.04	....	87.31	....
Subperiods 1, 2, and 3:					
Total	1,175.88	46.33	3.9	1,129.55	11.0
Average	90.45	3.56	....	86.89	....
Fourth subperiod:					
1903—Apr. 10	93.31	3.91	4.2	89.40	2.0
11	82.08	6.26	7.6	75.82	2.0
12	78.63	4.30	5.5	74.33	2.0
13	110.90	2.97	2.7	107.93	2.0
14	83.55	3.48	4.2	80.07	3.0
Total	448.47	20.92	4.2	427.55	11.0
Average	89.69	4.18	....	85.51	....
Entire preservative period:					
Total	1,624.35	67.25	4.1	1,557.10	22.0
Average	90.24	3.74	....	86.50	....
After period.					
1903—Apr. 15	113.48	3.36	3.0	110.12	....
16	93.48	5.14	5.5	88.34	....
17	96.78	5.96	6.2	90.82	....
18	95.69	5.85	6.1	89.84	....
19	81.37	4.92	6.0	76.45	....
20	100.90	5.16	5.1	95.74	....
21	82.35	1.59	1.9	80.76	....
22	84.71	3.09	3.6	81.62	....
Total	748.76	35.07	4.7	713.69	....
Average	93.60	4.38	....	89.22	....

a No movement.

TABLE LXXI.—*Fat balances for Series IV*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Mar. 20	127.97	4.89	3.8	123.08	....
21	133.10	5.28	4.0	127.82	....
22	102.07	3.66	3.6	98.41	....
23	138.24	3.96	2.9	134.28	....
24	112.38	5.29	4.7	107.09	....
25	145.75	6.28	4.3	139.47	....
26	132.21	6.01	4.5	126.20	....
27	138.40	6.33	4.6	132.07	....
Total	1,030.12	41.70	4.0	988.42	....
Average	128.76	5.21	....	123.55	....
Preservative period.					
First subperiod:					
1903—Mar. 28	119.36	8.20	6.9	111.16	0.5
29	124.76	8.20	6.6	116.56	.5
30	127.36	4.77	3.7	122.59	.5
31	124.71	9.90	7.9	114.81	.5
Total	496.19	31.07	6.3	465.12	2.0
Average	124.05	7.77	....	116.28	....
Second subperiod:					
1903—Apr. 1	144.98	4.08	2.8	140.90	1.0
2	113.71	7.13	6.3	106.58	1.0
3	135.05	4.87	3.6	130.18	1.0
4	123.56	3.74	3.0	119.82	1.0
Total	517.30	19.82	3.8	497.48	4.0
Average	129.32	4.96	....	124.36	....
Subperiods 1 and 2:					
Total	1,013.49	50.89	5.0	962.60	6.0
Average	126.69	6.36	....	120.33	....
Third subperiod:					
1903—Apr. 5	111.40	4.60	4.1	106.80	1.0
6	137.68	4.89	3.6	132.79	1.0
7	123.81	5.61	4.5	118.20	1.0
8	151.43	6.17	4.1	145.26	1.0
9	118.40	5.54	4.7	112.86	1.0
Total	642.72	26.81	4.2	615.91	5.0
Average	128.54	5.36	....	123.18	....
Subperiods 1, 2, and 3:					
Total	1,656.21	77.70	4.7	1,578.51	11.0
Average	127.40	5.98	....	121.42	....
Fourth subperiod:					
1903—Apr. 10	128.31	1.34	1.0	126.97	2.0
11	120.60	8.85	7.3	111.75	2.0
12	114.50	4.38	3.8	110.12	2.0
13	152.73	1.91	1.3	150.82	2.0
14	125.05	7.43	5.9	117.62	3.0
Total	641.19	23.91	3.7	617.28	11.0
Average	128.24	4.78	....	123.46	....
Entire preservative period:					
Total	2,297.40	101.61	4.4	2,195.79	22.0
Average	127.63	5.64	....	121.99	....
After period.					
1903—Apr. 15	....	(a)	....	....	....
16	Absent.	(a)	....	....	....
17	68.11	2.08	3.1	66.03	....
18	92.28	(a)	....	92.28	....
19	93.64	(a)	....	93.64	....
20	131.56	6.28	4.8	125.28	....
21	121.20	5.28	4.4	115.92	....
22	156.48	7.51	4.8	148.97	....
Total	663.27	21.15	3.2	642.12	....
Average	110.54	3.52	....	107.02	....

[a] No movement.

TABLE LXXI.—*Fat balances for Series IV*—Continued.

No. 11.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Mar. 20	132.01	2.91	2.2	129.10	....
21	104.19	2.12	2.0	102.07	....
22	106.88	2.90	2.7	103.98	....
23	....	Lost.	....	....	....
24	94.41	1.24	1.3	93.17	....
25	109.68	4.15	3.8	105.53	....
26	111.89	1.72	1.5	110.17	....
27	122.57	2.78	2.3	119.79	....
Total	781.63	17.82	2.3	763.81	....
Average	111.66	2.55	....	109.11	....
Preservative period (excluded).					
First subperiod:					
1903—Mar. 28	88.88	3.02	3.4	85.86	0.5
29	102.71	2.45	2.4	100.26	.5
30	14.93	6.70	44.9	8.23	.0
Total	206.52	12.17	5.9	194.35	1.0
Average	68.84	4.06	....	64.78	....
Fore period.					
1903—Mar. 31	25.16	(a)	....	25.16	.0
Apr. 1	68.58	2.69	3.9	65.89	.0
2	60.16	1.45	2.4	58.71	.0
3	104.61	2.80	2.7	101.81	.0
Total	258.51	6.94	2.7	251.57	.0
Average	64.63	1.74	....	62.89	....
Preservative period.					
1903—Apr. 4	90.74	5.32	5.9	85.42	0.5
5	93.26	3.41	3.7	89.85	1.0
6	95.12	3.26	3.4	91.86	1.0
7	107.76	5.20	4.8	102.56	1.0
8	114.49	3.12	2.7	111.37	1.0
9	90.32	4.06	4.5	86.26	1.0
10	108.73	2.44	2.2	106.29	1.0
11	83.21	3.71	4.5	79.50	1.0
12	97.05	4.22	4.3	92.83	2.0
13	107.57	4.34	4.0	103.23	2.0
14	90.11	2.60	2.9	87.51	3.0
Total	1,078.36	41.68	3.9	1,036.68	14.5
Average	98.03	3.79	....	94.24	....
After period.					
1903—Apr. 15	116.32	1.72	1.5	114.60	....
16	83.03	1.66	2.0	81.37	....
17	106.73	(a)	....	106.73	....
18	85.97	11.16	13.0	74.81	....
19	84.12	1.46	1.7	82.66	....
20	106.68	4.73	4.4	101.95	....
21	102.83	1.36	1.3	101.47	....
22	119.15	3.86	3.2	115.29	....
Total	801.83	25.95	3.2	778.88	....
Average	100.60	3.24	....	97.36	....

a No movement.

TABLE LXXI.—*Fat balances for Series IV*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Mar. 20	97.64	5.87	6.0	91.77	....
21	86.00	9.48	11.0	76.52	....
22	79.58	2.43	3.1	77.15	....
23	94.28	7.97	8.5	86.31	....
24	79.53	6.36	8.0	73.17	....
25	94.13	6.96	7.4	87.17	....
26	78.57	5.36	6.8	73.21	....
27	84.60	7.21	8.5	77.39	....
Total	694.33	51.64	7.4	642.69	....
Average	86.79	6.46	....	80.33	....
Preservative period (excluded).					
First subperiod:					
1903—Mar. 28	64.06	2.57	4.0	61.49	0.5
29	67.18	3.89	5.8	63.29	.5
30	73.61	6.22	8.4	67.39	.5
31	(a)	....	....	....	.5
Total	204.85	12.68	6.2	192.17	2.0
Average	68.28	4.23	....	64.05	....
Fore period.					
1903—Apr. 3	62.05	2.62	4.2	59.43	0.0
4	68.52	2.31	3.4	66.21	.0
5	64.92	3.29	5.1	61.63	.0
Total	195.49	8.22	4.2	187.27	.0
Average	65.16	2.74	....	62.42	....
Preservative period.					
1903—Apr. 6	83.41	3.66	4.4	79.75	1.0
7	68.40	4.34	6.3	64.06	1.0
8	105.71	1.01	1.0	104.70	1.0
9	63.73	1.22	1.9	62.51	1.0
10	64.22	2.67	4.2	61.55	1.0
11	66.93	(b)	....	66.93	1.0
12	60.67	4.63	7.6	56.04	2.0
13	97.71	4.64	4.7	93.07	2.0
14	66.37	2.88	4.3	63.49	3.0
Total	677.15	25.05	3.7	652.10	13.0
Average	75.24	2.78	....	72.46	....
After period.					
1903—Apr. 15	16.56	(b)	....	16.56	....
16	26.94	4.72	17.5	22.22	....
17	79.39	2.92	3.7	76.47	....
18	86.18	8.90	10.3	77.28	....
19	64.36	5.53	8.6	58.83	....
20	83.96	7.65	9.1	76.31	....
21	66.88	2.55	3.8	64.33	....
22	102.81	3.48	3.4	99.33	....
Total	527.08	35.75	6.8	491.33	....
Average	65.88	4.47	....	61.41	....

[a] Discarded. [b] No movement.

TABLE LXXII.—*Summary of fat balances for Series IV.*

Three men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1—2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 8	922.36	16.10	1.7	906.26	....
No. 9	767.38	32.62	4.3	734.76	....
No. 10	1,030.12	41.70	4.0	988.42	....
Total	2,719.86	90.42	3.3	2,629.44	....
Average	118.25	3.93	....	114.32	....
Preservative period.					
First subperiod:					
No. 8	516.78	20.36	3.9	496.42	2.0
No. 9	349.06	16.38	4.7	332.68	2.0
No. 10	496.19	31.07	6.3	465.12	2.0
Total	1,362.03	67.81	5.0	1,294.22	6.0
Average	113.50	5.65	....	107.85	....
Second subperiod:					
No. 8	529.82	15.84	3.0	513.98	4.0
No. 9	370.07	9.73	2.6	360.34	4.0
No. 10	517.30	19.82	3.8	497.48	4.0
Total	1,417.19	45.39	3.2	1,371.80	12.0
Average	118.10	3.78	....	114.32	....
Subperiods 1 and 2:					
No. 8	1,046.60	36.20	3.5	1,010.40	6.0
No. 9	719.13	26.11	3.6	693.02	6.0
No. 10	1,013.49	50.89	5.0	962.60	6.0
Total	2,779.22	113.20	4.1	2,666.02	18.0
Average	115.80	4.72	....	111.08	....
Third subperiod:					
No. 8	648.53	15.87	2.4	632.66	5.0
No. 9	456.75	20.22	4.4	436.53	5.0
No. 10	642.72	26.81	4.2	615.91	5.0
Total	1,748.00	62.90	3.6	1,685.10	15.0
Average	116.53	4.19	....	112.34	....
Subperiods 1, 2, and 3:					
No. 8	1,695.13	52.07	3.1	1,643.06	11.0
No. 9	1,175.88	46.33	3.9	1,129.55	11.0
No. 10	1,656.21	77.70	4.7	1,578.51	11.0
Total	4,527.22	176.10	3.9	4,351.12	33.0
Average	116.08	4.52	....	111.56	....
Fourth subperiod:					
No. 8	621.89	18.94	3.0	605.95	11.0
No. 9	448.47	20.92	4.2	427.55	11.0
No. 10	641.19	23.91	3.7	617.28	11.0
Total	1,711.55	63.77	3.7	1,650.78	33.0
Average	114.30	4.25	....	110.05	....
Entire preservative period:					
No. 8	2,320.02	71.01	3.1	2,249.01	22.0
No. 9	1,624.35	67.25	4.1	1,557.10	22.0
No. 10	2,297.40	101.61	4.4	2,195.79	22.0
Total	6,241.77	239.87	3.8	6,001.90	66.0
Average	115.59	4.44	....	111.15	....
After period.					
No. 8	992.78	29.99	3.0	962.79	....
No. 9	718.76	35.07	4.7	713.69	....
No. 10	663.27	21.15	3.2	642.12	....
Total	2,401.81	86.21	3.6	2,318.60	....
Average	109.31	3.92	....	105.40	....

TABLE LXXII.—*Summary of fat balances for Series IV*—Continued.

TWO MEN.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 11	258.51	6.94	2.7	251.57	....
No. 12	195.49	8.22	4.2	187.27	....
Total	454.00	15.16	3.3	438.84	....
Average	64.86	2.17	....	62.69	....
Preservative period.					
No. 11	1,078.36	41.68	3.9	1,036.68	14.5
No. 12	677.15	25.05	3.7	652.10	13.0
Total	1,755.51	66.73	3.8	1,688.78	27.5
Average	87.78	3.34	....	84.44	....
After period.					
No. 11	804.83	25.95	3.2	778.88	....
No. 12	527.08	35.75	6.8	491.33	....
Total	1,331.91	61.70	4.6	1,270.21	....
Average	83.24	3.86	....	79.38	....

FIVE MEN.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.					
No. 7	926.75	42.65	4.6	884.10	....
No. 8	922.36	16.10	1.7	906.26	....
No. 9	767.38	32.62	4.3	734.76	....
No. 10	1,030.12	41.70	4.0	988.42	....
No. 11	694.33	51.64	7.4	642.69	....
Total	4,340.94	184.71	4.3	4,156.23	....
Average	111.31	4.74	....	106.57	....
Preservative period.					
First subperiod:					
No. 7	437.44	24.59	5.6	412.85	2.0
No. 8	516.78	20.36	3.9	496.42	2.0
No. 9	349.06	16.38	4.7	332.68	2.0
No. 10	496.19	31.07	6.3	465.12	2.0
No. 11	204.85	12.68	6.2	192.17	2.0
Total	2,004.32	105.08	5.2	1,899.24	10.0
Average	105.49	5.53	....	99.96	....

TABLE LXXIII.—*Fat balances for Series V.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Apr. 24	....	Lost.	....	....	....
25	113.93	3.29	2.9	110.64	....
26	124.31	2.87	2.3	121.44	....
27	121.90	3.21	2.6	118.69	....
28	123.92	3.73	3.0	120.19	....
29	126.59	3.79	3.0	122.80	....
30	105.19	2.96	2.8	102.23	....
May 1	134.16	6.57	4.9	127.59	....
Total	850.00	26.42	3.1	823.58	....
Average	121.43	3.77	....	117.66	....
Preservative period.					
First subperiod:					
1903—May 2	122.35	7.16	5.9	115.19	0.5
3	137.56	1.82	1.3	135.74	.5
4	119.46	5.56	4.7	113.90	.5
5	120.08	3.93	3.3	116.15	.5
6	134.81	3.97	2.9	130.84	.5
7	128.19	5.64	4.4	122.55	.5
8	132.81	2.02	1.5	130.79	.5
9	124.85	4.23	3.4	120.62	.5
10	129.98	8.44	6.5	121.54	.5
11	125.61	4.54	3.6	121.07	.5
12	112.48	5.79	5.1	106.69	.5
13	118.93	4.40	3.7	114.53	.5
Total	1,507.11	57.50	3.8	1,449.61	6.0
Average	125.59	4.79	....	120.80	....
Second subperiod:					
1903—May 14	130.14	4.55	3.5	125.59	.5
15	122.76	7.23	5.9	115.53	.5
16	113.45	6.68	5.9	106.77	.5
17	127.37	1.70	1.3	125.67	.5
18	127.88	3.68	2.9	124.20	.5
19	131.61	3.62	2.8	127.99	.5
20	113.49	5.61	4.9	107.88	.5
21	130.19	3.90	3.0	126.29	.5
22	128.56	4.17	3.3	124.39	.5
23	112.63	3.47	3.1	109.16	.5
24	133.94	4.66	3.5	129.28	.5
25	124.51	3.67	2.9	120.84	.5
Total	1,496.53	52.94	3.5	1,443.59	6.0
Average	124.71	4.41	....	120.30	....
Subperiods 1 and 2:					
Total	3,003.64	110.44	3.7	2,893.20	12.0
Average	125.15	4.60	....	120.55	....
Third subperiod:					
1903—May 26	121.25	6.55	5.4	114.70	.5
27	123.46	3.63	2.9	119.83	.5
28	132.12	5.26	4.0	126.86	.5
29	139.15	4.05	2.9	135.10	.5
30	100.56	3.97	4.0	96.59	.5
31	....	Lost.	....	....	.5
June 1	121.80	8.41	6.9	113.39	.5
2	117.73	1.09	.9	116.64	.5
3	119.92	5.33	4.4	114.59	.5
4	130.03	4.62	3.6	125.41	.5
5	117.63	4.99	4.2	112.64	.5
6	108.81	4.57	4.2	104.24	.5
Total	1,332.46	52.47	3.9	1,279.99	6.0
Average	121.13	4.77	....	116.36	....
Subperiods 1, 2, and 3:					
Total	4,336.10	162.91	3.8	4,173.19	18.0
Average	123.89	4.65	....	119.24	....

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 1—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Preservative period—Continued.					
Fourth subperiod:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—June 7	133.21	3.52	2.6	129.69	0.5
8	119.19	4.18	3.5	115.01	.5
9	127.66	4.90	3.8	122.76	.5
10	119.58	4.83	4.0	114.75	.5
11	145.25	5.38	3.7	139.87	.5
12	141.73	5.60	4.0	136.13	.5
13	121.03	5.29	4.4	115.74	.5
14	142.16	3.08	2.2	139.08	.5
15	119.88	2.76	2.3	117.12	.5
16	127.80	6.57	5.1	121.23	.5
17	110.34	4.98	4.5	105.36	.5
18	136.50	6.21	4.5	130.29	.5
19	125.98	7.76	6.2	118.22	.5
20	103.65	5.14	5.0	98.51	.5
Total	1,773.96	70.20	4.0	1,703.76	7.0
Average	126.71	5.01	....	121.70	....
Entire preservative period:					
Total	6,110.06	233.11	3.8	5,876.95	25.0
Average	124.70	4.76	....	119.94	....
After period.					
1903—June 21	147.70	9.83	6.7	137.87	....
22	124.05	4.04	3.3	120.01	....
23	99.33	8.37	8.4	90.96	....
24	131.57	7.63	5.8	123.94	....
25	119.99	6.93	5.8	113.06	....
26	134.26	10.90	8.1	123.36	....
27	....	Lost.	....	....	....
28	151.94	6.00	3.9	145.94	....
29	119.66	5.37	4.5	114.29	....
Total	1,028.50	59.07	5.7	969.43	....
Average	128.56	7.38	....	121.18	....

No. 2.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.					
1903—Apr. 24	124.76	2.67	2.1	122.09	....
25	111.19	2.67	2.4	108.52	....
26	119.36	3.07	2.6	116.29	....
27	....	(a)	....	....	....
28	....	Lost.	....	....	....
29	120.47	1.51	1.3	118.96	....
30	87.38	1.94	2.2	85.44	....
May 1	119.90	2.33	1.9	117.57	....
Total	683.06	14.19	2.1	668.87	....
Average	113.84	2.36	....	111.48	....
Preservative period.					
First subperiod:					
1903—May 2	98.82	2.62	6.3	96.20	0.5
3	120.45	2.81	2.3	117.64	.5
4	109.35	1.70	1.6	107.65	.5
5	105.00	1.91	1.8	103.09	.5
6	135.91	1.97	1.4	133.94	.5
7	110.36	2.43	2.2	107.93	.5
8	111.64	1.90	1.7	109.74	.5
9	115.41	1.35	1.2	114.06	.5
10	107.05	2.40	2.2	104.65	.5
11	116.15	2.64	2.3	113.51	.5
12	100.48	2.32	2.3	98.16	.5
13	115.99	1.87	1.6	114.12	.5
Total	1,346.61	25.92	1.9	1,320.69	6.0
Average	112.22	2.16	....	110.06	....

[a] No movement.

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 2—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Preservative period—Continued.					
Second subperiod:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—May 14	95.94	2.23	2.3	93.71	0.5
15	101.36	2.32	2.3	99.04	.5
16	100.53	2.16	2.1	98.37	.5
17	104.84	2.03	1.9	102.81	.5
18	118.03	2.03	1.7	116.00	.5
19	102.73	2.68	2.6	100.05	.5
20	93.53	1.71	1.8	91.82	.5
21	90.30	1.68	1.9	88.62	.5
22	107.31	2.07	1.9	105.24	.5
23	93.56	2.77	3.0	90.79	.5
24	90.22	1.77	2.0	88.45	.5
25	97.23	2.11	2.2	95.12	.5
Total	1,195.58	25.56	2.1	1,170.02	6.0
Average	99.63	2.13	....	97.50	....
Subperiods 1 and 2:					
Total	2,542.19	51.48	2.0	2,490.71	12.0
Average	105.92	2.14	....	103.78	....
Third subperiod:					
1903—May 26	104.68	3.29	3.1	101.39	0.5
27	93.39	2.32	2.5	91.07	.5
28	96.07	4.17	4.3	91.90	.5
29	99.45	1.46	1.5	97.99	.5
30	79.42	2.33	2.9	77.09	.5
31	87.87	2.33	2.7	85.54	.5
June 1	90.05	4.13	4.6	85.92	.5
2	90.27	2.27	2.5	88.00	.5
3	59.81	3.07	5.1	56.74	.5
4	75.26	2.05	2.7	73.21	.5
5	59.26	1.42	2.4	57.84	.5
6	63.69	3.01	4.7	60.68	.5
Total	999.22	31.85	3.2	967.37	6.0
Average	83.27	2.65	....	80.62	....
Subperiods 1, 2, and 3:					
Total	3,541.41	83.33	2.4	3,458.08	18.0
Average	98.37	2.31	....	96.06	....
Fourth subperiod:					
1903—June 7	76.94	3.28	4.3	73.66	0.5
8	75.34	.80	.1	74.54	.5
9	69.87	4.23	6.1	65.64	.5
10	76.16	2.05	2.7	74.11	.5
11	78.96	2.17	2.7	76.79	.5
12	89.23	2.02	2.3	87.21	.0
13	90.66	3.03	3.3	87.63	.0
14	99.72	1.18	1.2	98.54	.0
15	95.61	3.41	3.6	92.20	.0
16	86.75	3.09	3.6	83.66	.0
17	75.82	4.73	6.2	71.09	.0
18	73.60	3.83	5.2	69.77	.0
19	88.73	4.49	5.1	84.24	.0
20	76.40	8.25	1.1	68.15	.0
Total	1,153.79	46.56	4.0	1,107.23	2.5
Average	82.41	3.33	....	79.08	....
Entire preservative period:					
Total	4,695.20	129.89	2.8	4,565.31	20.5
Average	93.90	2.60	....	91.30	....
After period.					
1903—June 21	97.95	3.68	3.8	94.27	....
22	89.22	3.86	4.3	85.36	....
23	93.92	4.58	4.9	89.34	....
24	120.15	7.00	5.8	113.15	....
25	112.61	5.70	5.1	106.91	....
26	119.46	3.75	3.1	115.71	....
27	109.39	5.31	4.9	104.05	....
28	129.64	3.25	2.5	126.39	....
29	115.83	3.05	2.6	112.78	....
Total	988.17	40.21	4.1	947.96	....
Average	109.80	4.47	....	105.33	....

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Apr. 24	....	Lost.	....	....	....
25	37.62	2.03	5.4	35.59	....
26	49.70	4.22	8.5	45.48	....
27	57.61	1.53	2.7	56.08	....
28	70.05	5.83	8.3	64.22	....
29	55.08	3.59	6.5	51.49	....
30	34.51	2.76	8.0	31.75	....
May 1	74.07	5.19	7.0	68.88	....
Total	378.64	25.15	6.6	353.49	....
Average	54.09	3.59	....	50.50	....
Preservative period.					
First subperiod:					
1903—May 2	58.08	3.03	5.2	55.05	0.5
3	68.02	3.65	5.4	64.37	.5
4	52.69	3.42	6.5	49.27	.5
5	43.44	2.75	6.3	40.69	.5
6	64.30	1.93	3.9	62.37	.5
7	56.92	3.43	6.0	53.49	.5
8	62.97	2.55	4.0	60.42	.5
9	69.80	2.77	4.0	67.03	.5
10	66.32	3.25	4.9	63.07	.5
11	63.43	2.94	4.6	60.49	.5
12	40.52	4.91	12.1	35.61	.5
13	53.00	3.63	6.8	49.37	.5
Total	699.49	38.26	5.5	661.23	6.0
Average	58.29	3.19	....	55.10	....
Second subperiod:					
1903—May 14	59.79	3.45	5.8	56.34	0.5
15	55.62	2.69	4.8	52.93	.5
16	42.28	2.85	6.7	39.43	.5
17	57.95	4.07	7.0	53.88	.5
18	62.95	2.11	3.4	60.84	.5
19	64.65	2.90	4.5	61.75	.5
20	43.03	1.99	4.6	41.04	.5
21	57.45	3.02	5.3	54.43	.5
22	56.73	4.34	7.7	52.39	.5
23	42.87	2.75	6.4	40.12	.5
24	63.00	3.05	4.8	59.95	.5
25	63.08	2.81	4.5	60.27	.5
Total	669.40	36.03	5.4	633.37	6.0
Average	55.78	3.00	....	52.78	....
Subperiods 1 and 2:					
Total	1,368.89	74.29	5.4	1,294.60	12.0
Average	57.04	3.10	....	53.94	....
Third subperiod:					
1903—May 26	50.86	3.91	7.7	46.95	0.5
27	54.01	2.71	5.0	51.30	.5
28	60.48	4.50	7.4	55.98	.5
29	73.19	2.51	3.4	70.68	.5
30	64.13	4.49	7.0	59.64	.5
31	....	Lost.	....	....	.5
June 1	55.56	4.12	7.4	51.44	.5
2	50.77	1.53	3.0	49.24	.5
3	63.28	2.44	3.9	60.84	.5
4	62.87	3.08	4.9	59.79	.5
5	55.29	2.56	4.6	52.73	.5
6	43.23	2.63	6.1	40.60	.5
Total	633.67	34.48	5.4	599.19	6.0
Average	57.61	3.13	....	54.48	....
Subperiods 1, 2, and 3:					
Total	2,002.56	108.77	5.4	1,893.79	18.0
Average	57.22	3.11	....	54.11	....

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 3—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Boric acid administered.
Preservative period—Continued.					
Fourth subperiod:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—June 7	69.04	1.44	2.1	67.60	0.5
8	60.35	4.50	7.5	55.85	.5
9	63.23	3.37	5.3	59.86	.5
10	50.88	3.70	7.3	47.18	.5
11	81.91	4.20	5.1	77.71	.5
12	72.28	1.91	2.6	70.37	.5
13	48.93	3.89	8.0	45.04	.5
14	69.95	4.11	5.9	65.84	.5
15	52.48	2.64	5.0	49.84	.5
16	59.64	5.64	9.5	54.00	.5
17	46.82	4.70	10.0	42.12	.5
18	68.09	6.22	9.1	61.87	.5
19	61.89	1.46	2.4	60.43	.5
20	48.07	7.21	15.0	40.86	.5
Total	853.56	54.99	6.4	798.57	7.0
Average	60.97	3.93	....	57.04	....
Entire preservative period:					
Total	2,856.12	163.76	5.7	2,692.36	25.0
Average	58.29	3.34	....	54.95	....
After period.					
1903—June 21	82.92	4.56	5.5	78.36	....
22	52.19	4.38	8.4	47.81	....
23	61.21	3.19	5.2	58.02	....
24	57.95	7.16	12.4	50.79	....
25	68.83	6.46	9.4	62.37	....
26	75.28	4.99	6.6	70.29	....
27	49.91	4.19	8.4	45.72	....
28	109.33	6.04	5.5	103.29	....
29	52.50	2.97	5.7	49.53	....
Total	610.12	43.94	7.2	566.18	....
Average	67.79	4.88	....	62.91	....

No. 4.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Apr. 24	109.84	2.74	2.5	107.10	....
25	55.08	(*a*)	....	55.08	....
26	82.64	4.66	5.6	77.98	....
27	88.74	4.19	4.7	84.55	....
28	93.54	3.53	3.8	90.01	....
29	60.99	2.85	4.7	58.14	....
30	57.79	4.45	7.7	53.34	....
May 1	75.67	6.60	8.7	69.07	....
Total	624.29	29.02	4.7	595.27	....
Average	78.04	3.63	....	74.41	....
Preservative period.					
First subperiod:					
1903—May 2	75.74	(*a*)	....	75.74	0.5
3	85.72	5.37	6.3	80.35	.5
4	76.37	2.73	3.6	73.64	.5
5	86.30	5.31	6.2	80.99	.5
6	93.13	2.17	2.3	90.96	.5
7	67.69	3.48	5.1	64.21	.5
8	71.60	3.44	4.8	68.16	.5
9	70.87	4.20	5.9	66.67	.5

a No movement.

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 4—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Preservative period—Continued.					
First subperiod—Continued.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—May 10	66.06	1.72	2.6	64.34	0.5
11	68.14	3.40	5.0	64.74	.5
12	44.48	3.63	8.2	40.85	.5
13	46.60	2.92	6.3	43.68	.5
Total	852.70	38.37	4.5	814.33	6.0
Average	71.06	3.20	....	67.86	....
Second subperiod:					
1903—May 14	65.49	3.55	5.4	61.94	0.5
15	70.80	1.45	2.0	69.35	.5
16	56.09	3.98	7.1	52.11	.5
17	74.22	3.09	4.2	71.13	.5
18	73.43	2.84	3.9	70.59	.5
19	74.33	7.07	9.5	67.26	.5
20	62.38	(a)	....	62.38	.5
21	72.64	1.09	1.5	71.55	.5
22	81.39	4.60	5.7	76.79	.5
23	49.70	3.90	7.8	45.80	.5
24	63.33	2.48	3.9	60.85	.5
25	71.88	1.95	2.7	69.93	.5
Total	815.68	36.00	4.4	779.68	6.0
Average	67.97	3.00	....	64.97	....
Subperiods 1 and 2:					
Total	1,668.38	74.37	4.5	1,594.01	12.0
Average	69.52	3.10	....	66.42	....

No. 5.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.					
1903—Apr. 24	136.60	2.90	2.1	133.70	....
25	116.45	1.08	.9	115.37	....
26	125.60	4.70	3.7	120.90	....
27	117.18	5.46	4.7	111.72	....
28	142.34	(a)	....	142.34	....
29	156.04	2.32	1.5	153.72	....
30	103.72	4.01	3.9	99.71	....
May 1	135.33	4.72	3.5	130.61	....
Total	1,033.26	25.19	2.4	1,008.07	....
Average	129.16	3.15	....	126.01	....
Preservative period.					
First subperiod:					
1903—May 2	116.37	1.91	1.6	114.46	0.5
3	136.11	1.78	1.3	134.33	.5
4	122.51	5.26	4.3	117.25	.5
5	126.07	2.93	2.3	123.14	.5
6	147.34	1.34	.9	146.00	.5
7	131.47	4.08	3.1	127.39	.5
8	132.29	4.25	3.2	128.04	.5
9	132.21	5.18	3.9	127.03	.5
10	136.06	4.91	3.6	131.15	.5
11	138.27	2.54	1.8	135.73	.5
12	151.35	3.88	2.6	147.47	.5
13	117.10	7.55	6.4	109.55	.5
Total	1,587.15	45.61	2.9	1,541.54	6.0
Average	132.26	3.80	....	128.46	....
Second subperiod:					
1903—May 14	115.14	(a)	....	115.14	0.5
15	132.13	6.05	4.6	126.08	.5
16	109.74	8.06	7.3	101.68	.5
17	94.35	(a)	....	94.35	.5
18	95.39	1.70	1.8	93.69	.5

[a] No movement.

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 5—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Preservative period—Continued.					
Second subperiod—Continued.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—May 19	98.00	(a)		98.00	0.5
20	86.32	6.45	7.5	79.87	.5
21	125.34	(a)		125.34	.5
22	115.10	7.19	6.2	107.91	.5
23	106.00	7.29	6.9	98.71	.5
24	116.61	2.79	2.4	113.82	.5
25		Lost.			.5
Total	1,194.12	39.53	3.1	1,154.59	6.0
Average	108.56	3.59		104.97	
Subperiods 1 and 2:					
Total	2,781.27	85.14	3.1	2,696.13	12.0
Average	120.92	3.70		117.22	
Third subperiod:					
1903—May 26	114.88	0.55	0.5	114.33	0.5
27	47.59	(a)		47.59	.0
28	100.48	(a)		100.48	.5
29	118.05	7.06	6.0	110.99	.5
30	95.97	2.51	2.6	93.46	.5
31	96.53	5.03	5.2	91.50	.5
June 1	97.88	.45	.5	97.43	.5
2	109.09	5.95	5.5	103.14	.5
3	101.25	5.44	5.4	95.81	.5
4	106.07	1.99	1.9	104.08	.5
5	87.76	(a)		87.76	.5
6	90.19	6.51	7.2	83.68	.5
Total	1,165.74	35.49	3.0	1,130.25	5.5
Average	97.14	2.96		94.18	
Subperiods 1, 2, and 3:					
Total	3,947.01	120.63	3.1	3,826.38	17.5
Average	112.77	3.45		109.32	
Fourth subperiod:					
1903—June 7	86.35	(a)		86.35	0.5
8	92.70	(a)		92.70	.5
9	85.28	7.55	8.9	77.73	.5
10	82.66	(a)		82.66	.5
11	117.32	7.05	6.0	110.27	.5
12	107.48	2.91	2.7	104.57	.5
13	69.29	8.81	1.3	60.48	.5
14	108.46	(a)		108.46	.5
15	98.29	4.52	4.6	93.77	.5
16	114.11	3.19	2.8	110.92	.5
17	97.54	7.42	7.6	90.12	.5
18	120.02	6.25	5.2	113.77	.5
19	121.50	(a)		121.50	.5
20	91.41	13.42	14.7	77.99	.5
Total	1,392.41	61.12	4.3	1,331.29	7.0
Average	99.46	4.36		95.10	
Entire preservative period:					
Total	5,339.42	181.75	3.4	5,157.67	24.5
Average	108.97	3.11		105.26	
After period.					
1903—June 21	144.01	(a)		144.01	
22	110.93	6.21	5.6	104.72	
23	103.58	2.45	2.4	101.13	
24	128.92	6.35	4.9	122.57	
25	136.13	9.05	6.6	127.08	
26	136.45	6.43	4.7	130.02	
27	118.47	4.57	3.9	113.90	
28	120.20	7.21	6.0	112.99	
29	114.85	2.40	2.1	112.45	
Total	1,113.54	44.67	4.1	1,068.87	
Average	123.73	4.96		118.77	

[a] No movement.

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
1903—Apr. 24		Lost.			
25	77.76	3.45	4.4	74.31	
26	94.18	3.87	4.1	90.31	
27	93.91	2.72	2.9	91.19	
28	103.19	4.06	3.9	99.13	
29	103.44	3.51	3.4	99.93	
30	87.89	5.69	6.5	82.20	
May 1	108.36	(*a*)		108.36	
Total	668.73	23.30	3.5	645.43	
Average	95.53	3.33		92.20	
Preservative period.					
First subperiod:					
1903—May 2	94.95	4.14	4.4	90.81	0.5
3	112.75	4.37	3.9	108.38	.5
4	89.59	3.21	3.6	86.38	.5
5	95.82	2.34	2.4	93.48	.5
6	113.79	4.12	3.6	109.67	.5
7	100.90	6.89	6.8	94.01	.5
8	107.20	(*a*)		107.20	.0
9	97.36	7.67	7.9	89.69	.0
10	102.89	5.60	5.4	97.29	.5
11	98.21	1.43	1.5	96.78	.5
12	83.36	2.71	3.1	80.65	.5
13	89.64	3.90	4.4	85.74	.5
Total	1,186.46	46.38	3.9	1,140.08	5.0
Average	98.87	3.86		95.01	
Second subperiod:					
1903—May 14	104.87	2.86	2.7	102.01	0.5
15	104.11	5.19	5.0	98.92	.5
16	86.78	2.91	3.4	83.87	.5
17	91.41	1.33	1.5	90.08	.5
18	99.46	3.31	3.3	96.15	.5
19	92.67	3.79	4.1	88.88	.5
20	83.84	3.22	3.8	80.62	.5
21	94.82	4.04	4.3	90.78	.5
22	106.37	2.84	2.7	103.53	.5
23	81.05	3.12	3.8	77.93	.5
24	100.57	4.34	4.3	96.23	.5
25	91.14	2.30	2.5	88.84	.5
Total	1,137.09	39.25	3.5	1,097.84	6.0
Average	94.76	3.27		91.49	
Subperiods 1 and 2:					
Total	2,323.55	85.63	3.7	2,237.92	11.0
Average	96.81	3.57		93.24	
Third subperiod:					
1903—May 26	83.14	2.10	2.5	81.04	0.5
27	92.47	(*a*)		92.47	.5
28	88.92	6.28	7.1	82.64	.5
29	103.75	6.75	6.5	97.00	.5
30	67.69	1.34	2.0	66.35	.5
31	93.57	2.58	2.8	90.99	.5
June 1	77.15	4.37	5.7	72.78	.5
2	86.35	4.33	5.6	82.02	.5
3	101.98	3.51	3.4	98.47	.5
4	97.98	2.20	2.2	95.78	.5
5	83.11	3.47	4.1	79.64	.5
6	81.50	1.94	2.4	79.56	.5
Total	1,057.61	38.87	3.7	1,018.74	6.0
Average	88.13	3.22		84.90	

a No movement.

TABLE LXXIII.—*Fat balances for Series V*—Continued.

No. 6—Continued.

Period and date.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Borax administered.
Preservative period—Continued.					
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
Total	3,381.16	124.50	3.7	3,256.66	17.0
Average	93.92	3.46	....	90.46	....
Fourth subperiod:					
1903—June 7	98.01	4.19	4.3	93.82	0.5
8	90.74	4.35	3.7	86.39	.5
9	102.10	4.38	4.3	97.72	.5
10	92.69	1.50	1.6	91.19	.5
11	105.66	2.74	2.6	102.92	.5
12	95.07	3.63	3.7	91.44	.0
13	67.57	3.71	3.8	63.86	.0
14	109.15	7.22	6.6	101.93	.0
15	80.26	4.57	5.7	75.69	.0
16	87.38	4.65	5.3	82.73	.0
17	79.18	(*a*)	....	79.18	.0
18	97.22	12.02	12.5	85.20	.0
19	....	(*a*)	....	....	.0
20	....	Lost.	....	....	.0
Total	1,105.03	52.96	4.8	1,052.07	2.5
Average	92.09	4.41	....	88.58	....
Entire preservative period:					
Total	4,486.19	177.46	4.0	4,308.73	19.5
Average	93.46	3.70	....	89.77	....
After period.					
1903—June 21	104.87	3.92	3.7	100.95	....
22	92.26	7.62	8.3	84.64	....
23	75.71	5.01	6.6	70.70	....
24	97.29	7.68	7.9	89.61	....
25	106.84	(*a*)	....	106.84	....
26	97.42	1.72	1.8	95.70	....
27	78.95	9.87	12.5	69.08	....
28	126.59	3.47	2.7	123.12	....
29	90.87	(*a*)	....	90.87	....
Total	870.80	39.29	4.5	831.51	....
Average	96.76	4.37	....	92.39	....

[a] No movement.

TABLE LXXIV.—*Summary of fat balances for Series V.*

Three men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 1	850.00	26.42	3.1	823.58	....
No. 3	378.64	25.15	6.6	353.49	....
No. 5	1,033.26	25.19	2.4	1,008.07	....
Total	2,261.90	76.76	3.4	2,185.14	....
Average	102.81	3.49	....	99.32	....
Preservative period.					
First subperiod:					
No. 1	1,507.11	57.50	3.8	1,449.61	6.0
No. 3	699.49	38.26	5.5	661.23	6.0
No. 5	1,587.15	45.61	2.9	1,541.54	6.0
Total	3,793.75	141.37	3.7	3,652.38	18.0
Average	105.38	3.93	....	101.45	....
Second subperiod:					
No. 1	1,496.53	52.94	3.5	1,443.59	6.0
No. 3	669.40	36.03	5.4	633.37	6.0
No. 5	1,194.12	39.53	3.1	1,154.59	6.0
Total	3,360.05	128.50	3.8	3,231.55	18.0
Average	96.00	3.67	....	92.33	....
Subperiods 1 and 2:					
Total	7,153.80	269.87	3.8	6,883.93	36.0
Average	100.76	3.80	....	96.96	....
Third subperiod:					
No. 1	1,332.46	52.47	3.9	1,279.99	6.0
No. 3	633.67	34.48	5.4	599.19	6.0
No. 5	1,165.74	35.49	3.0	1,130.25	5.5
Total	3,131.87	122.44	3.9	3,009.43	17.5
Average	92.11	3.60	....	88.51	....
Subperiods 1, 2, and 3:					
Total	10,285.67	392.31	3.8	9,893.36	53.5
Average	97.96	3.74	....	94.22	....
Fourth subperiod:					
No. 1	1,773.96	70.20	4.0	1,703.76	7.0
No. 3	853.56	54.99	6.4	798.57	7.0
No. 5	1,392.41	61.12	4.3	1,331.29	7.0
Total	4,019.93	186.31	4.6	3,833.62	21.0
Average	95.71	4.44	....	91.27	....
Entire preservative period:					
Total	14,305.60	578.62	4.0	13,726.98	74.5
Average	97.32	3.94	....	93.38	....
After period.					
No. 1	1,028.50	59.07	5.7	969.43	....
No. 3	610.12	43.94	7.2	566.18	....
No. 5	1,113.54	44.67	4.1	1,068.87	....
Total	2,752.16	147.68	5.4	2,604.48	....
Average	105.85	5.68	....	100.17	....

TABLE LXXIV.—*Summary of fat balances for Series V*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 1	850.00	26.42	3.1	823.58	....
No. 2	683.06	14.19	2.1	668.87	....
No. 3	378.64	25.15	6.6	353.49	....
No. 5	1,033.26	25.19	2.4	1,008.07	....
No. 6	668.73	23.30	3.5	645.43	....
Total	3,613.69	114.25	3.2	3,499.44	....
Average	103.25	3.26	....	99.99	....
Preservative period.					
First subperiod:					
No. 1	1,507.11	57.50	3.8	1,449.61	6.0
No. 2	1,346.61	25.92	1.9	1,320.69	6.0
No. 3	699.49	38.26	5.5	661.23	6.0
No. 5	1,587.15	45.61	2.9	1,541.54	6.0
No. 6	1,186.46	46.38	3.9	1,140.08	5.0
Total	6,326.82	213.67	3.4	6,113.15	29.0
Average	105.45	3.56	....	101.89	....
Second subperiod:					
No. 1	1,496.53	52.94	3.5	1,443.59	6.0
No. 2	1,195.58	25.56	2.1	1,170.02	6.0
No. 3	669.40	36.03	5.4	633.37	6.0
No. 5	1,194.12	39.53	3.1	1,154.59	6.0
No. 6	1,137.09	39.25	3.5	1,097.84	6.0
Total	5,692.72	193.31	3.4	5,499.41	30.0
Average	96.49	3.28	....	93.21	....
Subperiods 1 and 2:					
Total	12,019.54	406.98	3.4	11,612.56	59.0
Average	101.00	3.42	....	97.58	....
Third subperiod:					
No. 1	1,332.46	52.47	3.9	1,279.99	6.0
No. 2	999.22	31.85	3.2	967.37	6.0
No. 3	633.67	34.48	5.4	599.19	6.0
No. 5	1,165.74	35.49	3.0	1,130.25	5.5
No. 6	1,057.61	38.87	3.7	1,018.74	6.0
Total	5,188.70	193.16	3.7	4,995.54	29.5
Average	89.46	3.33	....	86.13	....
Subperiods 1, 2, and 3:					
Total	17,208.24	600.14	3.5	16,608.10	88.5
Average	97.22	3.39	....	93.83	....

TABLE LXXIV.—*Summary of fat balances for Series V*—Continued.

Six men.

Period.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)	5 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Per cent.*	*Grams.*	*Grams.*
No. 1	850.00	26.42	3.1	823.58	....
No. 2	683.06	14.19	2.1	668.87	....
No. 3	378.64	25.15	6.6	353.49	....
No. 4	624.29	29.02	4.7	595.27	....
No. 5	1,033.26	25.19	2.4	1,008.07	....
No. 6	668.73	23.30	3.5	645.43	....
Total	4,237.98	143.27	3.4	4,094.71	....
Average	98.56	3.33	....	95.23	....
Preservative period.					
First subperiod:					
No. 1	1,507.11	57.50	3.8	1,449.61	6.0
No. 2	1,346.61	25.92	1.9	1,320.69	6.0
No. 3	699.49	38.26	5.5	661.23	6.0
No. 4	852.70	38.37	4.5	814.33	6.0
No. 5	1,587.15	45.61	2.9	1,541.54	6.0
No. 6	1,186.46	46.38	3.9	1,140.08	5.0
Total	7,179.52	252.04	3.5	6,927.48	35.0
Average	99.72	3.50	....	96.22	....
Second subperiod:					
No. 1	1,496.53	52.94	3.5	1,443.59	6.0
No. 2	1,195.58	25.56	2.1	1,170.02	6.0
No. 3	669.40	36.03	5.4	633.37	6.0
No. 4	815.68	36.00	4.4	779.68	6.0
No. 5	1,194.12	39.53	3.1	1,154.59	6.0
No. 6	1,137.09	39.25	3.5	1,097.84	6.0
Total	6,508.40	229.31	3.5	6,279.09	36.0
Average	91.67	3.23	....	88.44	....
Subperiods 1 and 2:					
Total	13,687.92	481.35	3.5	13,206.57	71.0
Average	95.72	3.37	....	92.35	....

TABLE LXXV.—*General summary of fat balances.*

Period and series.	1 In food.	2 In feces.	3 In feces. (2÷1)	4 Balance. (1−2)
Fore period:	*Grams.*	*Grams.*	*Per cent.*	*Grams.*
Series II [a]	2,079.65	94.90	4.6	1,984.75
III	3,830.20	194.47	5.1	3,635.73
IV	2,719.86	90.42	3.3	2,629.44
V	2,261.90	76.76	3.4	2,185.14
Total	8,811.96	361.65	4.1	8,450.31
Average	111.54	4.58	....	106.96
Preservative period:				
Series II [a]	3,060.61	183.07	6.0	2,877.54
III	5,391.48	228.19	4.2	5,163.29
IV	6,241.77	239.87	3.8	6,001.90
V	14,305.60	578.62	4.0	13,726.98
Total	25,938.85	1,046.68	4.0	24,892.17
Average	104.59	4.22	....	100.37
After period:				
Series II [a]	....	....	....	....
III	2,924.84	106.88	3.7	2,817.96
IV	2,404.81	86.21	3.6	2,318.60
V	2,752.16	147.68	5.4	2,604.48
Total	8,081.81	340.77	4.2	7,741.04
Average	106.34	4.48	....	101.86

[a] Series II not included in total; all members ill in after period.

CALORIES TABLES.

TABLE LXXVI.—*Calories balances for Series II.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Jan. 21[a]	2,955	....	85.8	....	....	2.9	....	....	....
22	3,144	....	72.6	....	....	2.3	....	....	....
23	3,489	....	97.4	....	....	2.8	....	....	....
24	3,351	....	85.6	....	....	2.6	....	....	....
25	3,525	....	88.8	....	....	2.5	....	....	....
26	3,305	....	68.9	....	....	2.1	....	....	....
27	3,436	....	75.7	....	....	2.2	....	....	....
Total	23,205	1,070.5	574.8	1,645.3	4.6	2.5	7.1	21,559.7	....
Average	3,315	152.9	82.1	235.0	....	....	....	3,080.0	....
Preservative period.									
First subperiod:									
1903—Jan. 28	3,498	....	81.6	....	....	2.3	....	....	1.0
29	3,596	....	59.4	....	....	1.7	....	....	1.0
30	2,916	....	69.0	....	....	2.4	....	....	1.0
31	2,933	....	82.4	....	....	2.8	....	....	1.0
Total	12,913	879.8	292.4	1,172.2	6.8	2.3	9.1	11,770.8	4.0
Average	3,236	219.9	73.1	293.0	....	....	....	2,913.0	....
Second subperiod:									
1903—Feb. 1	3,644	....	67.5	....	....	1.9	....	....	2.0
2	3,139	....	77.8	....	....	2.5	....	....	2.0
3	3,399	....	64.8	....	....	1.9	....	....	2.0
4	3,346	....	73.1	....	....	2.2	....	....	2.0
Total	13,528	596.7	283.2	879.9	4.4	2.1	6.5	12,648.1	8.0
Average	3,382	149.2	70.8	220.0	....	....	....	3,162.0	....
Third subperiod:									
1903—Feb. 5	3,288	....	67.1	....	....	2.0	....	....	3.0
6	3,274	....	73.9	....	....	2.3	....	....	3.0
7	3,604	....	88.1	....	....	2.4	....	....	3.0
8	3,325	....	75.4	....	....	2.3	....	....	3.0
Total	13,491	707.2	304.5	1,011.7	5.2	2.3	7.5	12,479.3	12.0
Average	3,375	176.8	76.1	252.9	....	....	....	3,122.1	....
Subperiods 1, 2, and 3:									
Total	39,962	2,183.7	880.1	3,063.8	5.5	2.2	7.7	36,898.2	24.0
Average	3,330	182.0	73.3	255.3	....	....	....	3,074.8	....

[a] Data not obtained for January 19 and 20, the first two days of the fore period.

TABLE LXXVI.—*Calories balances for Series II*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Jan. 21[a]	4,019	....	86.6	....	....	2.2	....	....	....
22	3,993	....	91.7	....	....	2.3	....	....	....
23	4,133	....	71.1	....	....	1.7	....	....	....
24	4,303	....	96.8	....	....	2.2	....	....	....
25	3,897	....	69.5	....	....	1.8	....	....	....
26	3,903	....	76.9	....	....	2.0	....	....	....
27	3,782	....	85.1	....	....	2.3	....	....	....
Total	28,030	1,161.1	577.7	1,738.8	4.1	2.1	6.2	26,291.2	....
Average	4,004	165.9	82.2	248.1	....	....	....	3,755.9	....
Preservative period.									
First subperiod:									
1903—Jan. 28	4,063	....	89.9	....	....	2.2	....	....	1.0
29	(4,257)	(b)	(78.0)	....	....	(1.8)	....	....	1.0
30	4,147	....	77.7	....	....	1.9	....	....	1.0
31	(3,873)	(b)	(108.1)	....	....	(2.8)	....	....	1.0
Total	8,210	293.3	....	460.9	3.6	....	5.6	7,749.1	4.0
	(16,340)	....	(353.7)	....	....	(2.2)	....	....	
Average	4,105	146.6	....	230.4	....	....	....	4,090.8	....
	(4,085)	....	(88.4)	....	....	....	....	....	....
Second subperiod:									
1903—Feb. 1	4,344	....	85.1	....	....	2.0	....	....	2.0
2	4,053	....	84.2	....	....	2.1	....	....	2.0
3	3,604	....	105.9	....	....	2.9	....	....	2.0
4	3,872	....	87.8	....	....	2.3	....	....	2.0
Total	15,873	868.5	363.0	1,231.5	5.5	2.3	7.8	14,641.5	8.0
Average	3,968	217.1	90.8	307.9	....	....	....	3,660.1	....
Third subperiod:									
1903—Feb. 5	4,023	....	100.0	....	....	2.5	....	....	3.0
6	3,981	(c)	87.1	....	....	2.2	....	....	3.0
7	4,101	....	93.5	....	....	2.3	....	....	3.0
8	3,869	(c)	88.9	....	....	2.3	....	....	3.0
Total	15,974	571.0	369.5	940.5	3.6	2.3	5.9	15,033.5	12.0
Average	3,994	142.7	92.4	235.1	....	....	....	3,758.9	....
Subperiods 1, 2, and 3:									
Total	40,057	1,732.8	....	2,632.9	4.3	....	6.6	37,424.1	24.0
	(48,187)	....	(1,086.2)	....	....	(2.3)	....	....	
Average	4,006	173.3	....	263.3	....	....	....	3,742.7	....
	(4,016)	....	(90.5)	....	....	....	....	....	....

[a] Data not obtained for January 19 and 20. [b] Discarded. [c] No movement.

TABLE LXXVI.—*Calories balances for Series II*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Jan. 21 [a]	2,906	....	84.3	....	....	2.9	....	....	....
22	3,020	....	65.4	....	....	2.2	....	....	....
23	3,823	....	63.8	....	....	1.7	....	....	....
24	4,091	([b])	75.0	....	....	1.8	....	....	....
25	4,157	....	70.7	....	....	1.7	....	....	....
26	3,729	....	72.0	....	....	1.9	....	....	....
27	3,515	....	54.4	....	....	1.5	....	....	....
Total	25,241	951.3	485.6	1,436.9	3.8	1.9	5.7	23,804.1	....
Average	3,606	135.9	69.4	205.3	....	....	....	3,400.7	....
Preservative period.									
First subperiod:									
1903—Jan. 28	3,836	....	75.2	....	....	2.0	....	....	1.0
29	3,976	....	80.1	....	....	2.0	....	....	1.0
30	3,590	....	70.6	....	....	2.0	....	....	1.0
31	3,713	....	72.1	....	....	1.9	....	....	1.0
Total	15,115	622.5	298.0	920.5	4.1	2.0	6.1	14,194.5	4.0
Average	3,779	155.6	74.5	230.1	....	....	....	3,548.9	....
Second subperiod:									
1903—Feb. 1	3,828	....	75.1	....	....	2.0	....	....	2.0
2	3,418	....	86.5	....	....	2.5	....	....	2.0
3	2,700	....	76.1	....	....	2.8	....	....	2.0
4	2,916	....	74.7	....	....	2.6	....	....	2.0
Total	12,862	441.7	313.4	755.1	3.4	2.4	5.9	12,106.9	8.0
Average	3,215	110.4	78.4	188.8	....	....	....	3,026.2	....
Third subperiod:									
1903—Feb. 5	3,186	....	82.7	....	....	2.6	....	....	3.0
6	1,936	....	77.8	....	....	4.0	....	....	0.0
7	1,275	....	59.6	....	....	4.7	....	....	0.0
8	936	....	57.8	....	....	6.2	....	....	0.0
Total	7,333	406.0	277.9	683.9	5.5	3.8	9.3	6,649.1	3.0
Average	1,833	101.5	69.5	171.0	....	....	....	1,662.0	....
Subperiods 1, 2, and 3:									
Total	35,310	1,470.2	889.3	2,359.5	....	....	....	32,950.5	15.0
Average	2,943	122.5	74.1	196.6	4.2	2.5	6.7	2,746.4	....

[a] Data not obtained for January 19 and 20.

[b] No movement.

TABLE LXXVII.—*Summary of calories balances for Series II.*

Two men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 7	23,205	1,070.5	574.8	1,645.3	4.6	2.5	7.1	21,559.7	......
No. 10	28,030	1,161.1	577.7	1,738.8	4.1	2.1	6.2	26,291.2	......
Total	51,235	2,231.6	1,152.5	3,384.1	4.4	2.2	6.6	47,850.9	......
Average	3,660	159.4	82.3	241.7	......	......	......	3,418.3	......
Preservative period.									
First subperiod:									
No. 7	12,943	879.8	292.4	1,172.2	6.8	2.3	9.1	11,770.8	4
No. 10	8,210 (16,340)	293.3	...... (353.7)	460.9	3.6	...... (2.2)	5.6	7,749.1	4
Total	21,153 (29,283)	1,173.1	...... (646.1)	1,633.1	5.5	...... (2.2)	7.7	19,519.9	8
Average	3,526 (3,660)	195.5	...... (80.8)	272.2	....	....	....	3,253.8	......
Second subperiod:									
No. 7	13,528	596.7	283.2	879.9	4.4	2.1	6.5	12,648.1	8
No. 10	15,873	868.5	363.0	1,231.5	5.5	2.3	7.8	14,641.5	8
Total	29,401	1,465.2	646.2	2,111.4	5.0	2.2	7.2	27,289.6	16
Average	3,675	183.2	80.8	264.0	......	......	......	3,411.0	......
Subperiods 1 and 2:									
Total	50,554 (58,684)	2,638.3	...... (1,292.3)	3,744.5	5.2	...... (2.2)	7.4	46,809.5	24
Average	3,611 (3,668)	188.4	...... (80.8)	267.4	....	....	....	3,343.6	......
Third subperiod:									
No. 7	13,491	707.2	304 5	1,011 7	5.2	2.3	7.5	12,479.3	12
No. 10	15,974	571.0	369.5	940.5	3.6	2.3	5.9	15,033.5	12
Total	29,465	1,278.2	674.0	1,952.2	4.3	2.3	6.6	27,512.8	24
Average	3,683	159.8	84.3	244.0	......	......	......	3,439.1	......
Subperiods 1, 2, and 3:									
Total	80,019 (88,149)	3,916.5	...... (1,966.3)	5,696.7	4.9	...... (2.2)	7.1	74,322.[illegible]	48
Average	3,637 (3,673)	178.0	...... (81 9)	258.9	....	....	....	3,378.3	......

TABLE LXXVII.—*Summary of calories balances for Series II*—Continued.

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 7	23,205	1,070.5	574.8	1,645.3	4.6	2.5	7.1	21,559.7	......
No. 10	28,030	1,161.1	577.7	1,738.8	4.1	2.1	6.2	26,291.2	......
No. 12	25,241	951.3	485.6	1,436.9	3.8	1.9	5.7	23,804.1	......
Total	76,476	3,182.9	1,638.1	4,821.0	4.2	2.1	6.3	71,655.0	......
Average	3,642	151.6	78.0	229.6	......	......	......	3,412.4	......
Preservative period.									
First subperiod:									
No. 7	12,943	879.8	292.4	1,172.2	6.8	2.3	9.1	11,770.8	4.0
No. 10	8,210	293.3	......	460.9	3.6	......	5.6	7,749.1	4.0
	(16,340)	......	(353.7)	......	......	(2.2)	......	......	
No. 12	15,115	622.5	298.0	920.5	4.1	2.0	6.1	14,194.5	4.0
Total	36,268	1,795.6	......	2,553.6	4.9	......	7.0	33,714.4	12.0
	(44,398)	......	(944.1)	......	......	(2.1)	......	......	
Average	3,627	179.6	......	255.4	......	......	......	3,371.6	......
	(3,700)	......	(78.7)	......	......	......	......	......	......
Second subperiod:									
No. 7	13,528	596.7	283.2	879.9	4.4	2.1	6.5	12,648.1	8.0
No. 10	15,873	868.5	363.0	1,231.5	5.5	2.3	7.8	14,641.5	8.0
No. 12	12,862	441.7	313.4	755.1	3.4	2.4	5.9	12,106.9	8.0
Total	42,263	1,906.9	959.6	2,866.5	4.5	2.3	6.8	39,396.5	24.0
Average	3,522	158.9	80.0	238.9	......	......	......	3,283.1	......
Third subperiod:									
No. 7	13,491	707.2	304.5	1,011.7	5.2	2.3	7.5	12,479.3	12.0
No. 10	15,974	571.0	369.5	940.5	3.6	2.3	5.9	15,033.5	12.0
No. 12	7,333	406.0	277.9	683.9	5.5	3.8	9.3	6,649.1	3.0
Total	36,798	1,684.2	951.9	2,636.1	4.6	2.6	7.2	34,161.9	27.0
Average	3,066	140.4	79.3	219.7	......	......	......	2,846.3	......
Subperiods 1, 2, and 3:									
Total	78,531	3,702.5	......	5,420.1	4.7	......	6.9	73,110.9	36.0
	(86,661)	......	(1,903.7)	......	......	(2.2)	......	......	
Average	3,570	168.3	......	246.4	......	......	......	3,323.6	......
	(3,611)	......	(79.3)	......	......	......	......	......	......

TABLE LXXVIII.—*Calories balances for Series III.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Feb. 19	3,039	212.02	92.9	304.92	7.0	3.0	10.0	2,734.08	....
20	3,234	167.95	105.2	273.15	5.2	3.2	8.4	2,960.85	....
21	2,759	106.97	91.2	198.17	3.9	3.3	7.2	2,560.83	....
22	3,106	152.79	90.9	243.69	4.9	2.9	7.8	2,862.31	....
23	2,870	127.03	91.2	218.23	4.4	3.2	7.6	2,651.77	....
24	2,795	139.21	98.9	238.11	5.0	3.5	8.5	2,556.89	....
25	3,055	87.64	95.0	182.64	2.9	3.1	6.0	2,872.36	....
26	2,614	158.86	100.2	259.06	6.1	3.8	9.9	2,354.94	....
27	2,943	261.59	98.1	359.69	8.9	3.3	12.2	2,583.31	....
Total	26,415	1,414.06	863.60	2,277.66	5.3	3.3	8.6	24,137.34	....
Average	2,935	157.12	95.95	253.07	....	....	....	2,681.93	....
Preservative period.									
First subperiod:									
1903—Feb. 28	2,939	68.51	102.0	170.51	2.3	3.5	5.8	2,768.49	1.0
Mar. 1	3,053	284.80	103.2	388.00	9.3	3.4	12.7	2,665.00	1.0
2	3,002	174.91	96.0	270.91	5.8	3.2	9.0	2,731.09	1.0
3	2,925	148.79	96.3	245.09	5.1	3.3	8.4	2,679.91	1.0
Total	11,919	677.01	397.50	1,074.51	5.6	3.4	9.0	10,844.49	4.0
Average	2,979	169.25	99.38	268.63	....	....	....	2,710.37	....
Second subperiod:									
1903—Mar. 4	3,197	119.22	100.5	219.72	3.7	3.2	6.9	2,977.28	4.0
5	2,740	188.22	90.3	278.52	6.9	3.3	10.2	2,461.48	4.0
6	3,011	170.94	90.2	261.14	5.7	3.0	8.7	2,749.86	2.0
7	2,967	97.23	86.6	183.83	3.3	2.9	6.2	2,783.17	2.0
Total	11,915	575.61	367.6	943.21	4.8	3.1	7.9	10,971.79	12.0
Average	2,979	143.90	91.9	235.80	....	....	....	2,743.20	....
Third subperiod:									
1903—Mar. 8	2,413	113.29	89.8	203.09	3.7	4.7	8.4	2,209.91	3.0
9	3,017	101.22	85.8	187.02	3.4	2.8	6.2	2,829.98	2.0
10	3,037	156.10	89.0	245.10	5.1	3.0	8.1	2,791.90	3.0
11	2,218	40.26	89.0	129.26	1.8	4.0	5.8	2,088.74	2.0
Total	10,685	410.87	353.6	764.47	3.8	3.4	7.2	9,920.53	10.0
Average	2,671	102.72	88.4	191.12	....	....	....	2,479.88	....
Entire preservative period:									
Total	34,519	1,663.49	1,118.70	2,782.19	3.2	4.8	8.0	31,736.81	26.0
Average	2,877	138.62	93.23	231.85	....	....	....	2,645.15	....
After period.									
1903—Mar. 12	2,217	135.32	92.2	227.52	6.1	4.2	10.3	1,989.48	....
13	3,008	123.64	96.3	219.94	4.1	3.2	7.3	2,788.06	....
14	3,056	156.15	103.4	259.55	5.1	3.4	8.5	2,796.45	....
15	2,723	112.60	95.8	208.40	4.2	3.5	7.7	2,514.60	....
16	2,979	86.01	90.8	176.81	2.9	3.0	5.9	2,802.19	....
17	2,799	143.24	93.2	236.44	5.1	3.3	8.4	2,562.56	....
18	3,239	163.86	89.5	253.36	5.0	2.8	7.8	2,985.64	....
19	2,940	115.70	81.7	197.40	3.9	2.8	6.7	2,742.60	....
Total	22,961	1,036.52	742.90	1,779.42	4.5	3.2	7.7	21,181.58	....
Average	2,870	129.56	92.86	222.42	....	....	....	2,647.58	....

TABLE LXXVIII.—*Calories balances for Series III*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Feb. 19	3,071	161.34	81.7	243.04	5.2	2.7	7.9	2,827.96	....
20	3,481	131.26	82.8	214.06	3.7	2.4	6.1	3,266.94	....
21	3,154	95.02	80.5	175.52	3.0	2.6	5.6	2,978.48	....
22	3,310	149.73	83.0	232.73	4.5	2.5	7.0	3,077.27	....
23	3,290	118.09	86.9	204.99	3.6	2.6	6.2	3,085.01	....
24	3,150	65.63	89.7	155.33	2.1	2.8	4.9	2,994.67	....
25	3,256	113.33	86.1	199.43	3.5	2.6	6.1	3,056.57	....
26	2,675	157.46	87.7	245.16	5.9	3.3	9.2	2,429.84	....
27	3,410	140.53	90.5	231.03	4.1	2.7	6.8	3,178.97	....
Total	28,797	1,132.39	768.9	1,901.29	3.9	2.7	6.6	26,895.71	....
Average	3,200	125.82	85.4	211.25	....	....	....	2,988.75	....
Preservative period.									
First subperiod:									
1903—Feb. 28	3,387	150.62	89.1	239.72	4.5	2.6	7.1	3,147.28	1.0
Mar. 1	3,181	126.19	90.3	216.49	4.0	2.8	6.8	2,964.51	1.0
2	3,377	117.96	93.2	211.16	3.5	2.8	6.3	3,165.84	1.0
3	3,721	106.69	82.8	189.49	2.9	2.2	5.1	3,531.51	1.0
Total	13,666	501.46	355.4	856.86	3.7	2.6	6.3	12,809.14	4.0
Average	3,416	125.36	88.8	214.22	....	....	....	3,201.78	....
Second subperiod:									
1903—Mar. 4	3,285	97.66	88.5	186.16	3.0	2.7	5.7	3,098.84	4.0
5	1,911	38.19	75.0	113.19	2.0	3.9	5.9	1,797.81	2.0
6	1,937	(*a*)	68.8	68.80	....	3.6	3.6	1,868.20	.0
7	2,131	(*a*)	79.2	79.20	....	3.7	3.7	2,051.80	1.0
Total	9,264	135.85	311.5	447.35	1.5	3.3	4.8	8,816.65	7.0
Average	2,316	33.96	77.9	111.84	....	....	....	2,204.16	....
Third subperiod:									
1903—Mar. 8	1,469	114.92	78.2	193.12	7.8	5.3	13.1	1,275.88	.0
9	1,837	116.11	79.6	195.71	6.3	4.4	10.7	1,641.29	.0
10	2,316	66.26	81.4	147.66	2.9	3.5	6.4	2,168.34	.0
11	3,259	78.16	82.6	160.76	2.4	2.5	4.9	3,098.24	.0
Total	8,881	375.45	321.8	697.25	4.3	3.6	7.9	8,183.75	.0
Average	2,220	93.86	80.4	174.31	....	....	....	2,045.69	....
Entire preservative period:									
Total	31,811	1,012.76	988.7	2,001.46	3.2	3.1	6.3	29,809.54	11.0
Average	2,651	84.40	82.4	166.79	....	....	....	2,484.21	....
After period.									
1903—Mar. 12	3,259	141.45	86.2	227.65	4.3	2.7	7.0	3,031.35	....
13	2,924	104.12	82.8	186.92	3.6	2.8	6.4	2,737.08	....
14	3,432	133.10	86.1	219.20	3.9	2.5	6.4	3,212.80	....
15	3,179	98.85	73.1	171.95	3.1	2.3	5.4	3,007.05	....
16	3,599	147.23	80.1	227.33	4.1	2.2	6.3	3,371.67	....
17	3,466	148.18	79.5	227.68	4.3	2.3	6.6	3,238.32	....
18	3,558	123.07	70.6	193.67	3.4	2.0	5.4	3,364.33	....
19	3,827	59.58	71.6	131.18	1.5	1.9	3.4	3,695.82	....
Total	27,241	955.58	630.0	1,585.58	3.5	2.3	5.8	25,658.42	....
Average	3,406	119.45	78.8	198.20	....	....	....	3,207.30	....

a No movement.

TABLE LXXVIII.—*Calories balances for Series III*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Feb. 19	2,859	173.28	63.6	236.88	6.1	2.2	8.3	2,622.12	
20	2,732	66.31	72.3	138.61	2.4	2.7	5.1	2,593.39	
21	[2,846]	[110.08]	Lost.		[3.9]				
22	3,102	129.26	82.1	211.36	4.2	2.6	6.8	2,890.64	
23	3,060	183.00	93.5	276.50	6.0	3.0	9.0	2,783.50	
24	2,858	56.37	74.7	131.07	2.0	2.6	4.6	2,726.93	
25	3,105	109.55	82.1	191.65	3.5	2.7	6.2	2,913.35	
26	2,828	135.52	79.0	214.52	4.8	2.8	7.6	2,613.48	
27	2,822	94.43	67.1	161.53	3.3	2.4	5.7	2,660.47	
Total	23,366		614.4	1,562.12		2.6	6.7	21,803.88	
	[26,212]	[1,057.80]			[4.0]				
Average	2,921		76.8	195.26				2,725.74	
	[2,912]	[117.53]							
Preservative period.									
First subperiod:									
1903—Feb. 28	2,952	78.87	69.8	148.67	2.7	2.3	5.0	2,803.33	1.0
Mar. 1	2,933	109.83	76.1	185.93	3.7	2.6	6.3	2,747.07	1.0
2	(2,981)	Lost.	(66.8)			(2.2)			1.0
3	2,995	101.90	72.9	174.80	3.4	2.4	5.8	2,820.20	1.0
Total	8,880	290.60		509.40	3.3		5.7	8,370.60	4.0
	(11,861)		(285.6)			(2.4)			
Average	2,960	96.87		169.80				2,790.20	
	(2,965)		(71.4)						
Second subperiod:									
1903—Mar. 4	3,160	143.90	71.8	215.70	4.5	2.3	6.8	2,944.30	4.0
5	3,002	38.30	30.3	68.60	1.3	1.0	2.3	2,933.40	4.0
6	2,666	157.20	64.1	221.30	5.9	2.4	8.3	2,444.70	2.0
7	2,719	106.97	58.3	165.27	3.9	2.2	6.1	2,553.73	2.0
Total	11,547	446.37	224.5	670.87	3.9	1.9	5.8	10,876.13	12.0
Average	2,887	111.59	56.13	167.72				2,719.28	
Third subperiod:									
1903—Mar. 8	2,641	55.09	92.6	147.69	2.1	3.5	5.6	2,493.31	3.0
9	2,406	169.85	60.2	230.05	7.1	2.5	9.6	2,175.95	3.0
10	2,377	70.33	64.2	134.53	3.0	2.7	5.7	2,242.47	2.0
11	2,181	43.56	57.1	100.66	2.0	2.6	4.6	2,080.34	3.0
Total	9,605	338.83	274.1	612.93	3.5	2.9	6.4	8,992.07	11.0
Average	2,401	84.71	68.52	153.23				2,247.77	
Entire preservative period:									
Total	30,032	1,075.80		1,793.20	3.6		6.0	28,238.80	27.0
	(33,013)		(784.2)			(2.4)			
Average	2,730	97.80		163.02				2,566.98	
	(2,751)		(65.35)						
After period.									
1903—Mar. 12	2,355	142.78	52.9	195.68	6.1	2.2	8.3	2,159.32	
13	2,851	63.55	72.0	135.55	2.3	2.5	4.8	2,715.45	
14	2,473	132.13	70.0	202.13	5.4	2.8	8.2	2,270.87	
15	2,534	57.44	73.6	131.04	2.3	2.9	5.2	2,402.96	
16	2,947	218.21	65.9	284.11	7.4	2.2	9.6	2,662.89	
17	(2,923)	Lost.	(56.7)			(1.9)			
18	2,739	127.50	62.1	189.60	4.7	2.2	6.9	2,549.40	
19	2,685	138.01	61.1	199.11	5.1	2.3	7.4	2,485.89	
Total	18,584	879.62		1,337.22	4.7		7.2	17,246.78	
	(21,507)		(514.3)			(2.4)			
Average	2,655	125.66		191.03				2,463.97	
	(2,688)		(64.29)						

TABLE LXXVIII.—*Calories balances for Series III*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Feb. 19	Absent.								
20	2,924	116.49	66.3	182.79	4.0	2.3	6.3	2,741.21	
21	2,801	66.92	64.4	131.32	2.4	2.3	4.7	2,669.68	
22	(2,611)	(*a*)	(66.6)			(2.6)			
23	3,142	64.30	99.2	163.50	2.0	3.2	5.2	2,978.50	
24	2,889	125.47	85.2	210.67	4.3	3.0	7.3	2,678.33	
25	3,441	130.29	76.6	206.89	3.8	2.2	6.0	3,234.11	
26	2,766	142.28	94.1	236.38	5.1	3.4	8.5	2,529.62	
27	2,994	98.42	70.8	169.22	3.3	2.4	5.7	2,824.78	
Total	20,957	744.17		1,300.77	3.6		6.2	18,656.23	
	(23,568)		(623.2)			(2.6)			
Average	2,994	106.31		185.82				2,808.03	
	(2,946)		(77.9)						
Preservative period.									
First subperiod:									
1903—Feb. 28	2,676	116.34	89.4	205.74	4.4	3.3	7.7	2,470.26	1.0
Mar. 1	3,042	210.10	79.5	289.60	6.9	2.6	9.5	2,752.40	1.0
2	2,988	102.02	94.3	196.32	3.4	3.2	6.6	2,791.68	1.0
3	3,541	157.19	90.9	248.09	4.4	2.6	7.0	3,292.91	1.0
Total	12,247	585.65	354.1	939.75	4.8	2.9	7.7	11,307.25	4.0
Average	3,062	146.41	88.5	234.94				2,827.06	
Second subperiod:									
1903—Mar. 4	3,049	110.58	80.3	190.88	3.6	2.6	6.3	2,858.12	4.0
5	2,778	145.34	37.8	183.14	5.2	1.4	6.6	2,594.86	4.0
6	2,359	79.74	72.0	151.74	3.4	3.0	6.4	2,207.26	2.0
7	2,160	123.21	68.8	192.01	5.7	3.2	8.9	1,967.99	2.0
Total	10,346	458.87	258.9	717.77	4.4	2.5	6.9	9,628.23	12.0
Average	2,586	114.72	64.7	179.44				2,407.06	
Third subperiod:									
1903—Mar. 8	2,296	102.82	62.9	165.72	4.5	2.7	7.2	2,130.28	3.0
9	2,017	78.95	64.7	143.65	3.9	3.2	7.1	1,873.35	1.7
10	2,373	131.36	72.0	203.36	5.5	3.1	8.6	2,169.64	3.0
11	1,223	122.18	59.7	181.88	10.0	4.9	14.9	1,041.12	2.0
Total	7,909	435.31	259.3	694.61	5.5	3.3	8.8	7,214.39	9.7
Average	1,977	108.83	64.8	173.65				1,803.35	
Entire preservative period:									
Total	30,502	1,479.83	872.3	2,352.13	4.9	2.8	7.7	28,149.87	25.7
Average	2,542	123.32	72.6	196.01				2,345.82	
After period.									
1903—Mar. 12	(1,981)	Lost.	(55.2)			(2.8)			
13	(2,164)	Lost.	(56.6)			(2.6)			
14	2,642	(*b*)	55.9	55.90		2.1	2.1	3,586.10	
15	2,103	138.28	59.1	197.38	6.6	2.8	9.4	1,905.62	
16	[2,588]	[112.68]	Lost.		[4.4]				
17	2,547	77.70	62.6	140.30	3.0	2.5	5.5	2,406.70	
18	2,652	96.99	69.9	166.89	3.7	2.6	6.3	2,485.11	
19									
Total	9,944			560.47			5.6	9,383.53	
	(14,092)		(359.3)			(2.5)			
	[12,532]	[125.65]			[3.4]				
Average	2,486							2,345.88	
	(2,349)		(59.9)						
	[2,506]	[85.13]							

a Discarded. *b* No movement.

TABLE LXXVIII.—*Calories balances for Series III*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Feb. 19	3,176	85.12	79.7	164.82	2.7	2.5	5.2	3,011.18	......
20	3,506	43.84	90.9	134.74	1.2	2.6	3.8	3,371.26	......
21	3,482	71.89	99.3	171.19	2.1	2.8	4.9	3,310.81	......
22	3,694	320.99	88.1	409.09	8.7	2.4	11.1	3,284.91	......
23	3,224	174.26	86.3	260.56	5.4	2.7	8.1	2,963.44	......
24	3,396	68.05	101.1	169.15	2.0	3.0	5.0	3,226.85	......
25	3,717	116.72	96.6	213.32	4.3	3.6	7.9	3,503.68	......
26	3,044	254.59	103.4	357.99	8.4	3.4	11.8	2,686.01	......
27	3,506	43.75	96.0	139.75	1.3	2.7	4.0	3,366.25	......
Total	30,745	1,179.21	841.4	2,020.61	3.8	2.8	6.6	28,724.39	......
Average	3,416	131.02	93.49	224.51	....	....	....	3,191.49	......
Preservative period.									
First subperiod:									
1903—Feb. 28	3,557	214.81	93.4	308.21	6.1	2.6	8.7	3,248.79	1.0
Mar. 1	3,808	16.70	95.6	112.30	.4	2.5	2.9	3,695.70	1.0
2	3,831	158.79	94.1	252.89	4.1	2.5	6.6	3,578.11	1.0
3	3,533	241.90	101.0	342.90	6.9	2.8	9.7	3,190.10	1.0
Total	14,729	632.20	384.1	1,016.30	4.3	2.6	6.9	13,712.70	4.0
Average	3,682	158.05	96.02	254.07	....	....	....	3,427.93	......
Second subperiod:									
1903—Mar. 4	3,752	136.22	100.0	236.22	3.6	2.7	6.3	3,515.78	4.0
5	3,695	95.07	93.2	188.27	2.6	2.5	5.1	3,506.73	4.0
6	3,542	220.29	83.2	303.49	6.2	2.4	8.6	3,238.51	2.0
7	3,085	127.09	85.2	212.29	4.1	2.8	6.9	2,872.71	2.0
Total	14,074	578.67	361.6	940.27	4.1	2.6	6.7	13,133.73	12.0
Average	3,518	144.67	90.4	235.07	....	....	....	3,282.93	......
Third subperiod:									
1903—Mar. 8	2,831	112.51	80.3	192.81	4.0	2.8	6.8	2,638.19	3.0
9	2,887	29.49	81.3	110.79	1.0	2.8	3.8	2,776.21	3.0
10	2,303	64.34	79.7	144.04	2.8	3.5	6.3	2,158.96	2.2
11	2,138	25.32	77.2	102.52	1.2	3.6	4.8	2,035.48	3.0
Total	10,159	231.66	318.50	550.16	2.3	3.1	5.4	9,608.84	11.2
Average	2,540	57.92	79.62	137.54	....	....	....	2,402.46	......
Entire preservative period:									
Total	38,962	1,442.53	1,064.20	2,506.73	3.7	2.7	6.4	36,455.27	27.2
Average	3,247	120.21	88.68	208.89	....	....	....	3,038.11	......
After period.									
1903—Mar. 12	2,358	208.08	86.7	294.78	8.8	3.7	12.5	2,063.22	......
13	2,954	130.19	84.1	214.29	4.4	2.9	7.3	2,739.71	......
14	3,620	173.53	97.2	270.73	4.8	2.7	7.5	3,349.27	......
15	3,510	(*a*)	90.2	90.20	....	2.6	2.6	3,419.80	......
16	3,731	116.32	87.9	204.22	3.1	2.4	5.5	3,526.78	......
17	3,635	182.87	93.0	275.87	5.0	2.6	7.6	3,359.13	......
18	3,987	35.00	89.5	124.50	.9	2.2	3.1	8,862.50	......
19	3,734	130.34	89.0	219.34	3.5	2.4	5.9	3,514.66	......
Total	27,529	976.33	717.6	1,693.93	3.6	2.6	6.2	25,835.07	......
Average	3,441	122.04	89.7	211.74	....	....	....	3,229.26	......

a No movement.

TABLE LXXVIII.—*Calories balances for Series III*—Continued.

No. 6.

Period and date.	1	2	3	4	5	6	7	8	9
	In food.	In feces.	In urine.	In feces and urine. (2+3)	In feces. (2÷1)	In urine. (3÷1)	In feces and urine. (4÷1)	Balance. (1−4)	Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Feb. 19	2,438	(a)	48.7	48.70	....	2.0	2.0	2,389.30	....
20	2,423	56.27	61.7	117.97	2.3	2.6	4.9	2,305.03	....
21	2,493	309.50	61.8	371.30	12.4	2.5	14.8	2,121.70	....
22	2,361	139.89	55.7	195.59	5.9	2.4	8.3	2,165.41	....
23	2,786	(a)	68.5	68.50	....	2.5	2.5	2,717.50	....
24	2,897	92.93	70.2	163.13	3.2	2.4	5.6	2,733.87	....
25	2,861	111.87	77.5	189.37	3.9	2.7	6.6	2,671.63	....
26	2,747	143.39	76.3	219.69	5.2	2.8	8.0	2,527.31	....
27	2,680	(a)	76.2	76.20	....	2.8	2.8	2,603.80	....
Total	23,686	853.85	596.6	1,450.45	3.6	2.5	6.1	22,235.55	....
Average	2,632	94.87	66.3	161.16	....	....	....	2,470.62	....
Preservative period.									
First subperiod:									
1903—Feb. 28	1,922	192.79	76.4	269.19	10.0	4.0	14.0	1,652.81	1.0
Mar. 1	1,703	218.99	73.8	292.79	12.9	4.3	17.2	1,410.21	.0
2	2,221	163.98	63.8	227.78	7.4	2.9	10.3	1,993.22	.0
3	3,192	81.80	85.7	167.50	2.5	2.7	5.2	3,024.50	.0
Total	9,038	657.56	299.7	957.26	7.3	3.3	10.6	8,080.74	1.0
Average	2,259	164.39	74.9	239.32	....	....	....	2,020.19	....
Second subperiod:									
1903—Mar. 4	2,585	144.21	86.7	230.91	5.6	3.5	8.9	2,354.09	.0
5	2,550	240.55	79.6	320.15	9.4	3.2	12.6	2,229.85	.0
6	2,719	194.32	69.3	263.62	7.2	2.5	9.7	2,455.38	1.0
7	2,986	182.94	84.5	267.44	6.2	2.8	9.0	2,718.56	2.0
Total	10,840	762.02	320.1	1,082.12	7.0	3.0	10.0	9,757.88	3.0
Average	2,710	190.50	80.0	270.53	....	....	....	2,439.47	....
Third subperiod:									
1903—Mar. 8	2,748	186.58	58.6	245.18	6.8	2.1	8.9	2,502.82	3.0
9	2,497	134.61	69.7	204.31	5.4	2.8	8.2	2,292.69	3.0
10	2,621	(a)	69.8	69.80	....	2.7	2.7	2,551.20	3.0
11	2,568	158.56	68.6	227.16	6.2	2.6	8.8	2,340.84	3.0
Total	10,434	479.75	266.7	746.45	4.6	2.5	7.2	9,687.55	12.0
Average	2,608	119.92	66.7	186.61	....	....	....	2,421.89	....
Entire preservative period:									
Total	30,312	1,899.33	886.5	2,785.83	6.3	2.9	9.2	27,526.17	16.0
Average	2,526	158.28	73.8	232.15	....	....	....	2,293.85	....
After period.									
1903—Mar. 12	2,622	175.75	80.9	256.65	6.7	3.1	9.8	2,365.35	....
13	2,172	157.33	75.0	232.33	6.4	3.0	9.4	2,239.67	....
14	2,806	64.27	80.6	144.87	2.3	2.9	5.2	2,661.13	....
15	2,819	133.16	84.5	217.66	4.7	3.0	7.7	2,601.34	....
16	2,827	145.40	66.3	211.70	5.1	2.1	7.5	2,615.30	....
17	3,017	152.80	72.7	225.50	5.1	2.4	7.5	2,791.50	....
18	2,735	252.70	70.9	323.60	9.2	2.6	11.8	2,411.40	....
19	(2,712)	Lost.	(71.7)	....	....	(2.6)	....	....	....
Total	19,298 (22,010)	1,081.41	.... (602.6)	1,612.31	5.6	.... (2.7)	8.4	17,685.69	....
Average	2,757 (2,751)	151.49	.... (75.3)	230.33	....	....	....	2,526.67	....

a No movement.

TABLE LXXIX.—*Summary of calories balances for Series III.*

Four men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 1	26,415	1,414.06	863.60	2,277.66	5.3	3.3	8.6	24,137.34	
No. 3	23,366		614.40	1,562.12		2.6	6.7	21,803.88	
	[26,212]	[1,057.80]			[4.0]				
No. 4	20,957	744.17		1,300.77	3.6		6.2	19,656.23	
	(23,568)		(623.20)			(2.6)			
No. 5	30,745	1,179.21	841.40	2,020.61	3.8	2.8	6.6	28,724.39	
Total	101,483			7,161.16			7.1	94,321.84	
	(104,094)		(2,942.60)			(2.8)			
	[104,329]	[4,395.24]			[4.2]				
Average	3,075			217.00				2,858.00	
	(3,062)		(86.55)						
	[3,069]	[129.27]							
Preservative period.									
First subperiod:									
No. 1	11,919	677.01	397.50	1,074.51	5.6	3.4	9.0	10,844.49	4.0
No. 3	8,880	290.60		509.40	3.3		5.7	8,370.60	4.0
	(11,861)		(285.60)			(2.4)			
No. 4	12,247	585.65	354.10	939.75	4.8	2.9	7.7	11,307.25	4.0
No. 5	14,729	632.20	384.10	1,016.30	4.3	2.6	6.9	13,712.70	4.0
Total	47,775	2,185.46		3,539.96	4.6		7.4	44,235.04	16.0
	(50,756)		(1,421.30)			(2.8)			
Average	3,185	145.70		236.00				2,949.00	
	(3,172)		(88.83)						
Second subperiod:									
No. 1	11,915	575.61	367.60	943.21	4.8	3.1	7.9	10,971.79	12.0
No. 3	11,547	446.37	224.50	670.87	3.9	1.9	5.8	10,876.13	12.0
No. 4	10,346	462.47	258.90	721.37	4.5	2.5	7.0	9,624.63	12.0
No. 5	14,074	578.67	361.60	940.27	4.1	2.6	6.7	13,133.73	12.0
Total	47,882	2,063.12	1,212.60	3,275.72	4.3	2.5	6.8	44,606.28	48.0
Average	2,993	128.95	75.79	204.73				2,788.27	
Third subperiod:									
No. 1	10,685	410.87	353.60	764.47	3.8	3.4	7.2	9,920.53	10.0
No. 3	9,605	338.83	274.10	612.93	3.5	2.9	6.4	8,992.07	11.0
No. 4	7,909	435.31	259.30	694.61	5.5	3.3	8.8	7,214.39	9.7
No. 5	10,159	231.66	318.50	550.16	2.3	3.1	5.4	9,608.84	11.2
Total	38,358	1,416.67	1,205.50	2,622.17	3.7	3.1	6.8	35,735.83	41.9
Average	2,397	88.54	75.35	163.89				2,233.11	
Entire preservative period:									
No. 1	34,519	1,663.49	1,118.70	2,782.19	3.2	4.8	8.0	31,736.81	26.0
No. 3	30,032	1,075.80		1,793.20	3.6		6.0	28,238.80	27.0
	(33,013)		(784.20)			(2.4)			
No. 4	30,502	1,483.43	872.30	2,355.73	4.9	2.8	7.7	28,146.27	25.7
No. 5	38,962	1,442.53	1,064.20	2,506.73	3.7	2.7	6.4	36,455.27	27.2
Total	134,015	5,665.25		9,437.85	4.2		7.0	124,577.15	105.9
	(136,996)		(3,839.40)			(2.8)			
Average	2,851	120.54		200.81				2,650.19	
	(2,854)		(79.99)						
After period.									
No. 1	22,961	1,036.52	742.90	1,779.42	4.5	3.2	7.7	21,181.58	
No. 3	18,584	879.62		1,337.22	4.7		7.2	17,246.78	
	(21,507)		(514.30)			(2.4)			
No. 4	9,944			560.47			5.6	9,383.53	
	(14,092)		(359.30)			(2.5)			
	[12,532]	[425.65]			[3.4]				
No. 5	27,529	976.33	717.60	1,693.93	3.6	2.6	6.2	25,835.07	
Total	79,018			5,371.04			6.8	73,646.96	
	(86,089)		(2,334.10)			(2.7)			
	[81,606]	[3,318.12]			[4.1]				
Average	2,927			198.93				2,728.07	
	(2.870)		(77.80)						
	[2,914]	[118.50]							

TABLE LXXIX.—*Summary of calories balances for Series III*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 1	26,415	1,414.06	863.60	2,277.66	5.3	3.3	8.6	24,137.34	......
No. 2	28,797	1,132.39	768.90	1,901.29	3.9	2.7	6.6	26,895.71	......
No. 3	23,366	......	614.40	1,562.12	......	2.6	6.7	21,803.88	......
	[26,212]	[1,057.80]	......	......	[4.0]	......	......	......	......
No. 4	20,957	744.17	......	1,300.77	3.6	......	6.2	19,656.23	......
	(23,568)	......	(623.20)	......	......	(2.6)	......	......	......
No. 5	30,745	1,179.21	841.40	2,020.61	3.8	2.8	6.6	28,724.39	......
Total	130,280	......	......	9,062.45	......	......	7.0	121,217.55	......
	(132,891)	......	(3,711.50)	......	......	(2.8)	......	......	......
	[133,126]	[5,527.63]	......	......	[4.2]	......	......	......	......
Average	3,102	......	......	215.77	......	......	......	2,886.23	......
	(3,090)	......	(863.10)	......	......	......	......	......	......
	[3,096]	[128.55]	......	......	......	......	......	......	......
Preservative period.									
First subperiod:									
No. 1	11,919	677.01	397.50	1,074.51	5.6	3.4	9.0	10,844.49	4.0
No. 2	13,666	501.46	355.40	856.86	3.7	2.6	6.3	12,809.14	4.0
No. 3	8,880	290.60	......	509.40	3.3	......	5.7	8,370.60	4.0
	(11,861)	......	(285.60)	......	......	(2.4)	......	......	
No. 4	12,247	585.65	354.10	939.75	4.8	2.9	7.7	11,307.25	4.0
No. 5	14,729	632.20	384.10	1,016.30	4.3	2.6	6.9	13,712.70	4.0
Total	61,441	2,686.92	......	4,396.82	4.4	......	7.2	57,044.18	20.0
	(64,422)	......	(1,776.70)	......	......	(2.8)	......	......	
Average	3,234	141.42	......	231.41	......	......	......	3,002.59	......
	(3,221)	......	(88.84)	......	......	......	......	......	......
Second subperiod:									
No. 1	11,915	575.61	367.60	943.21	4.8	3.1	7.9	10,971.79	12.0
No. 2	9,264	135.85	311.50	447.35	1.5	3.3	4.8	8,816.65	7.0
No. 3	11,547	446.37	224.50	670.87	3.9	1.9	5.8	10,876.13	12.0
No. 4	10,346	462.47	258.90	721.37	4.5	2.5	7.0	9,621.63	12.0
No. 5	14,074	578.67	361.60	940.27	4.1	2.6	6.7	13,133.73	12.0
Total	57,146	2,198.97	1,524.10	3,723.07	3.8	2.7	6.5	53,422.93	55.0
Average	2,857	109.95	76.20	186.15	......	......	......	2,670.85	......
Third subperiod:									
No. 1	10,685	410.87	353.60	764.47	3.8	3.4	7.2	9,920.53	10.0
No. 2	8,881	375.45	321.80	697.25	4.3	3.6	7.9	8,183.75	.0
No. 3	9,605	338.83	274.10	612.93	3.5	2.9	6.4	8,992.07	11.0
No. 4	7,909	435.31	259.30	694.61	5.5	3.3	8.8	7,214.39	9.7
No. 5	10,159	231.66	318.50	550.16	2.3	3.1	5.4	9,608.81	11.2
Total	47,239	1,792.12	1,527.30	3,319.42	3.8	3.2	7.0	43,919.58	41.9
Average	2,362	89.61	76.37	165.97	......	......	......	2,196.03	......
Entire preservative period:									
No. 1	34,519	1,663.49	1,118.70	2,782.19	3.2	4.8	8.0	31,736.81	26.0
No. 2	31,811	1,012.76	988.70	2,001.46	3.2	3.1	6.3	29,809.51	11.0
No. 3	30,032	1,075.80	......	1,793.20	3.6	......	6.0	28,238.80	27.0
	(33,013)	......	(784.20)	......	......	(2.4)	......	......	
No. 4	30,502	1,483.43	872.30	2,355.73	4.9	2.8	7.7	28,146.27	25.7
No. 5	38,962	1,442.53	1,064.20	2,506.73	3.7	2.7	6.4	36,455.27	27.2
Total	165,826	6,678.01	......	11,439.31	4.0	......	6.9	154,386.69	116.9
	(168,807)	......	(4,828.10)	......	......	(2.9)	......	......	
Average	2,811	113.19	......	193.89	......	......	......	2,617.11	......
	(2,813)	......	(80.47)	......	......	......	......	......	......

TABLE LXXX.—*Calories balances for Series IV.*

NO. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Mar. 20	2,159	139.83	36.0	175.83	6.5	1.7	8.1	1,983.17	....
21	2,680	176.92	70.3	247.22	6.6	2.6	9.2	2,432.78	....
22	2,547	150.18	61.0	211.18	5.9	2.4	8.3	2,335.82	....
23	3,165	119.45	68.9	188.35	3.8	2.2	6.0	2,976.65	....
24	2,906	143.40	46.5	189.90	4.9	1.6	6.5	2,716.10	....
25	2,924	95.77	55.3	151.07	3.3	1.9	5.2	2,772.93	....
26	3,036	251.37	64.2	315.57	8.3	2.1	10.4	2,720.43	....
27	2,943	83.26	58.5	141.76	2.8	2.0	4.8	2,801.24	....
Total	22,360	1,160.18	460.7	1,620.88	5.2	2.1	7.2	20,739.12	....
Average	2,795	145.02	57.6	202.61	....	....	....	2,592.39	....
Preservative period.									
First subperiod:									
1903—Mar. 28	2,929	167.86	72.5	240.36	5.7	2.5	8.2	2,688.64	0.5
29	2,908	257.67	57.2	314.87	8.9	2.0	10.8	2,593.13	.5
30	2,886	198.19	65.8	263.99	6.9	2.3	9.1	2,622.01	.5
31	2,979	141.38	64.5	205.88	4.7	2.2	6.9	2,773.12	.5
Total	11,702	765.10	260.0	1,025.10	6.5	2.2	8.8	10,676.90	2.0
Average	2,926	191.28	65.0	256.28	....	....	....	2,669.22	....
Second subperiod:									
1903—Apr. 1	2,798	(*a*)	48.4	48.40	....	....	1.7	2,749.60	1.0
2	Dropped.	....	....	....	....	....	....	....	....

a No movement.

TABLE LXXX.—*Calories balances for Series IV*—Continued.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Mar. 20	4,781	30.39	72.8	103.19	0.7	1.5	2.2	4,677.81	....
21	4,336	127.19	83.2	210.39	3.0	1.9	4.9	4,125.61	....
22	4,384	82.44	80.7	163.14	1.9	1.8	3.7	4,220.86	....
23	....	Lost.	....	....	....	....	....	....	....
24	3,333	(a)	73.9	73.90	....	2.2	2.2	3,259.10	....
25	3,822	199.85	98.6	298.45	5.2	2.6	7.8	3,523.55	....
26	3,973	174.52	83.1	257.62	4.4	2.1	6.5	3,715.38	....
27	3,756	(a)	95.1	95.10	....	2.5	2.5	3,660.90	....
Total	28,385	614.39	587.4	1,201.79	2.1	2.1	4.2	27,183.21	....
Average	4,055	87.77	83.91	171.68	....	....	....	3,883.32	....
Preservative period.									
First subperiod:									
1903—Mar. 28	3,769	112.44	66.4	178.84	3.0	1.7	4.7	3,590.16	0.5
29	3,759	222.76	85.5	308.26	5.9	2.3	8.2	3,450.74	.5
30	3,851	230.04	90.9	320.94	6.0	2.3	8.3	3,530.06	.5
31	3,743	150.57	87.6	238.17	4.0	2.4	6.4	3,504.83	.5
Total	15,122	715.81	330.4	1,046.21	4.7	2.2	6.9	14,075.79	2.0
Average	3,780	178.95	82.6	261.55	....	....	....	3,518.45	....
Second subperiod:									
1903—Apr. 1	3,900	(a)	85.1	85.10	....	2.2	2.2	3,814.90	1.0
2	3,333	227.38	79.5	306.88	6.8	2.4	9.2	3,026.12	1.0
3	3,613	97.47	81.8	179.27	2.7	2.3	5.0	3,433.73	1.0
4	3,313	205.76	80.0	285.76	6.2	2.4	8.6	3,027.24	1.0
Total	14,159	530.61	326.4	857.01	3.8	2.3	6.1	13,301.99	4.0
Average	3,540	132.65	81.6	214.25	....	....	....	3,325.75	....
Subperiods 1 and 2:									
Total	29,281	1,246.42	656.8	1,903.22	4.3	2.2	6.5	27,377.78	6.0
Average	3,660	155.80	82.1	237.90	....	....	....	3,422.10	....
Third subperiod:									
1903—Apr. 5	3,517	(a)	73.0	73.00	....	2.1	2.1	3,444.00	1.0
6	3,916	115.48	96.9	212.38	2.9	2.5	5.4	3,703.62	1.0
7	3,901	180.69	89.2	269.89	4.6	2.3	6.9	3,631.11	1.0
8	4,110	160.07	79.5	239.57	3.9	1.9	5.8	3,870.43	1.0
9	3,655	125.57	79.9	205.47	3.4	2.2	5.6	3,449.53	1.0
Total	19,099	581.81	418.5	1,000.31	3.0	2.2	5.2	18,098.69	5.0
Average	3,820	116.36	83.7	200.06	....	....	....	3,169.94	....
Subperiods 1, 2, and 3:									
Total	48,380	1,828.23	1,075.30	2,903.53	3.8	2.2	6.0	45,476.47	11.0
Average	3,722	140.63	82.72	223.35	....	....	....	3,498.65	....
Fourth subperiod:									
1903—Apr. 10	3,696	119.25	71.2	190.45	3.3	1.9	5.2	3,505.55	2.0
11	3,723	112.39	80.5	192.89	3.0	2.2	5.2	3,530.11	2.0
12	3,434	178.67	70.1	248.77	5.2	2.0	7.2	3,185.23	2.0
13	3,618	107.59	54.7	162.29	3.0	1.5	4.5	3,455.71	2.0
14	3,584	125.00	66.8	191.80	3.5	1.9	5.4	3,392.20	3.0
Total	18,055	642.90	343.3	986.20	3.6	1.9	5.5	17,068.80	11.0
Average	3,611	128.58	68.66	197.24	....	....	....	3,413.76	....
Entire preservative period:									
Total	66,435	2,471.13	1,418.60	3,889.73	3.7	2.2	5.9	62,545.27	22.0
Average	3,691	137.28	78.81	216.10	....	....	....	3,474.90	....
After period.									
1903—Apr. 15	3,798	100.53	76.0	176.53	2.6	2.0	4.6	3,621.47	....
16	3,653	124.05	68.9	192.95	3.4	1.9	5.3	3,460 05	....
17	3,676	148.36	72.6	220.96	4.0	2.0	6.0	3,455.04	....
18	2,959	91.32	72.4	163.72	3.1	2.4	5.5	2,795.28	....
19	3,033	171.26	81.7	258.96	5.7	2.8	8.5	2,774.01	....
20	3,851	169.98	86.8	256.78	4.4	2.3	6.7	3,594.22	....
21	3,318	(a)	89.9	89.90	....	2.7	2.7	3,228.10	....
22	3,474	231.21	68.8	300.01	6.6	2.0	8.6	3,173.96	....
Total	27,762	1,039.71	620.1	1,659.81	3.8	2.2	6.0	26,102.16	....
Average	3,470	129.97	77.51	207.18	....	....	....	3,262.52	....

a No movement.

TABLE LXXX.—*Calories balances for Series IV*—Continued.

No. 9.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Mar. 20	2,747	174.09	80.0	254.09	6.3	2.9	9.2	2,492.91	....
21	3,248	92.10	93.7	185.80	2.8	2.9	5.7	3,062.20	....
22	3,028	175.89	86.9	262.79	5.8	2.9	8.7	2,765.21	....
23	3,529	148.99	83.2	232.19	4.2	2.4	6.6	3,296.81	....
24	3,129	119.83	90.3	210.13	3.8	2.9	6.7	2,918.87	....
25	3,425	122.65	100.5	223.15	3.6	2.9	6.5	3,201.85	....
26	3,410	143.12	90.0	233.12	4.2	2.6	6.8	3,176.88	....
27	3,430	75.55	95.0	170.55	2.2	2.8	5.0	3,259.45	....
Total	25,946	1,052.22	719.6	1,771.82	4.1	2.8	6.9	24,174.18	....
Average	3,243	131.53	89.95	221.48	....	....	....	3,021.52	....
Preservative period.									
First subperiod:									
1903—Mar. 28	3,239	138.66	91.8	230.46	4.3	2.8	7.1	3,008.54	0.5
29	3,369	151.65	95.9	247.55	4.5	2.8	7.3	3,121.45	.5
30	3,425	132.19	96.4	228.59	3.9	2.8	6.7	3,196.41	.5
31	3,407	129.83	89.3	219.13	3.8	2.6	6.4	3,187.87	.5
Total	13,440	552.33	373.4	925.73	4.1	2.8	6.9	12,514.27	2.0
Average	3,360	138.08	93.35	231.43	....	....	....	3,128.57	....
Second subperiod:									
1903—Apr. 1	3,314	134.10	87.0	221.10	4.1	2.6	6.7	3,092.90	1.0
2	3,162	(a)	88.1	88.10	....	2.8	2.8	3,073.90	1.0
3	3,392	221.86	91.3	313.16	6.5	2.7	9.2	3,078.84	1.0
4	3,656	(a)	97.4	97.40	....	2.7	2.7	3,558.60	1.0
Total	13,524	355.96	363.8	719.76	2.6	2.7	5.3	12,804.24	4.0
Average	3,381	88.99	90.95	179.94	....	....	....	3,201.06	....
Subperiods 1 and 2:									
Total	26,964	908.29	737.2	1,645.49	3.4	2.7	6.1	25,318.51	6.0
Average	3,370	113.54	92.15	205.69	....	....	....	3,164.31	....
Third subperiod:									
1903—Apr. 5	3,192	124.30	87.4	211.70	3.9	2.7	6.6	2,980.30	1.0
6	3,313	169.66	98.1	267.76	5.1	3.0	8.1	3,045.24	1.0
7	3,473	108.90	97.8	206.70	3.2	2.8	6.0	3,266.30	1.0
8	3,562	186.32	91.2	277.52	5.2	2.6	7.8	3,284.48	1.0
9	3,293	58.77	97.3	156.07	1.8	2.9	4.7	3,136.93	1.0
Total	16,833	647.95	471.8	1,119.75	3.9	2.8	6.7	15,713.25	5.0
Average	3,367	129.59	94.36	223.95	....	....	....	3,143.05	....
Subperiods 1, 2, and 3:									
Total	43,797	1,556.24	1,209.0	2,765.24	3.6	2.7	6.3	41,031.76	11.0
Average	3,369	119.71	93.0	212.71	....	....	....	3,156.29	....
Fourth subperiod:									
1903—Apr. 10	3,290	112.35	95.4	207.75	3.4	2.9	6.3	3,082.25	2.0
11	3,285	184.61	94.4	279.01	5.6	2.9	8.5	3,005.99	2.0
12	3,249	127.58	90.2	217.78	3.9	2.8	6.7	3,031.22	2.0
13	3,573	88.13	81.1	169.23	2.5	2.2	4.7	3,403.77	2.0
14	3,348	102.84	86.4	189.24	3.1	2.6	5.7	3,158.76	3.0
Total	16,745	615.51	447.5	1,063.01	2.6	3.7	6.3	15,681.99	11.0
Average	3,349	123.10	89.5	212.60	....	....	....	3,136.40	....
Entire preservative period:									
Total	60,542	2,171.75	1,656.50	3,828.25	3.6	2.7	6.3	56,713.75	22.0
Average	3,363	120.65	92.03	212.68	....	....	....	3,150.32	....
After period.									
1903—Apr. 15	3,405	91.93	84.7	176.63	2.7	2.5	5.2	3,228.37	....
16	3,527	141.21	82.1	223.31	4.0	2.3	6.3	3,303.69	....
17	3,203	162.04	89.5	251.54	5.1	2.8	7.9	2,951.46	....
18	3,474	158.72	113.8	272.52	4.5	3.3	7.8	3,201.48	....
19	3,235	136.10	80.4	216.50	4.2	2.5	6.7	3,018.50	....
20	3,405	141.69	100.5	242.19	4.2	2.9	7.1	3,162.81	....
21	3,123	43.88	94.1	137.98	1.4	3.0	4.4	2,985.02	....
22	3,197	122.99	89.2	212.19	3.8	2.8	6.6	2,984.81	....
Total	26,569	998.56	734.3	1,732.86	3.7	2.8	6.5	24,836.14	....
Average	3,321	124.82	91.79	216.61	....	....	....	3,104.39	....

a No movement.

TABLE LXXX.—*Calories balances for Series IV*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Mar. 20	3,435	119.47	84.4	203.89	3.5	2.4	5.9	3,231.13	....
21	3,537	130.52	93.1	223.62	3.7	2.6	6.3	3,313.38	....
22	3,027	91.65	91.8	183.45	3.0	3.1	6.1	2,843.55	....
23	3,289	98.17	86.6	184.77	3.0	2.6	5.6	3,104.23	....
24	3,837	130.93	87.1	218.03	3.4	2.3	5.7	3,618.97	....
25	4,032	150.99	107.8	258.79	3.7	2.7	6.4	3,773.21	....
26	4,295	146.64	100.9	247.54	3.4	2.4	5.8	4,047.46	....
27	4,105	158.11	91.8	249.91	3.9	2.2	6.1	3,855.09	....
Total	29,557	1,026.48	743.5	1,769.98	3.5	2.5	6.0	27,787.02	....
Average	3,695	128.31	92.94	221.25	....	....	....	3,473.75	....
Preservative period.									
First subperiod:									
1903—Mar. 28	3,825	247.62	96.9	344.52	6.5	2.5	9.0	3,480.48	0.5
29	3,858	206.77	91.2	297.97	5.3	2.4	7.7	3,560.03	.5
30	3,606	119.89	88.6	208.49	3.3	2.5	5.8	3,397.51	.5
31	3,845	247.99	86.9	334.89	6.4	2.3	8.7	3,510.11	.5
Total	15,134	822.27	363.6	1,185.87	5.4	2.4	7.8	13,948.13	2.0
Average	3,784	205.57	90.90	296.47	....	....	....	3,487.53	....
Second subperiod:									
1903—Apr. 1	3,838	112.88	87.5	200.38	2.9	2.3	5.2	3,637.62	1.0
2	3,623	196.31	66.6	262.91	5.4	1.9	7.3	3,360.09	1.0
3	3,774	134.79	107.0	241.79	3.6	2.8	6.4	3,532.21	1.0
4	3,939	103.30	82.8	186.10	2.6	2.1	4.7	3,752.90	1.0
Total	15,174	547.28	343.9	891.18	3.6	2.3	5.9	14,282.82	4.0
Average	3,794	136.82	85.98	222.80	....	....	....	3,570.70	....
Subperiods 1 and 2:									
Total	30,308	1,369.55	707.5	2,077.05	4.5	2.4	6.9	28,230.95	6.0
Average	3,788	171.19	88.44	259.63	....	....	....	3,528.37	....
Third subperiod:									
1903—Apr. 5	3,735	128.36	86.0	214.36	3.4	2.3	5.7	3,520.64	1.0
6	3,853	135.44	71.7	207.14	3.5	1.9	5.4	3,645.86	1.0
7	3,930	160.18	97.1	257.28	4.1	2.4	6.5	3,672.72	1.0
8	3,987	167.70	80.1	247.80	4.2	2.0	6.2	3,739.20	1.0
9	3,818	151.45	74.9	226.35	4.0	1.9	5.9	3,591.65	1.0
Total	19,323	743.13	409.8	1,152.93	3.9	2.1	6.0	18,170.07	5.0
Average	3,865	148.63	81.96	230.59	....	....	....	3,634.41	....
Subperiods 1, 2, and 3:									
Total	49,631	2,112.68	1,117.3	3,229.98	4.3	2.2	6.5	46,401.02	11.0
Average	3,818	162.51	85.95	248.46	....	....	....	3,569.51	....
Fourth subperiod:									
1903—Apr. 10	3,766	41.69	71.2	112.89	1.1	1.9	3.0	3,653.11	2.0
11	3,969	277.26	92.6	369.86	7.0	2.3	9.3	3,599.14	2.0
12	3,801	137.63	85.4	223.03	3.6	2.3	5.9	3,580.97	2.0
13	3,928	60.61	75.3	135.91	1.6	1.9	3.5	3,792.09	2.0
14	3,749	231.74	56.4	291.14	6.3	1.5	7.8	3,457.86	3.0
Total	19,216	751.93	380.9	1,132.83	3.9	2.0	5.9	18,083.17	11.0
Average	3,843	150.39	76.18	226.57	....	....	....	3,616.43	....
Entire preservative period:									
Total	68,847	2,861.61	1,498.2	4,362.81	4.1	2.2	6.3	64,484.19	22.0
Average	3,825	159.15	83.23	242.38	....	....	....	3,582.62	....
After period.									
1903—Apr. 15	(a)	....	....	....	....	....	....	....	....
16	Absent.	....	....	....	....	....	....	....	....
17	1,704	60.79	71.6	132.39	3.6	4.2	7.8	1,571.61	....
18	2,574	(b)	58.1	58.1	....	2.3	2.3	2,515.90	....
19	2,481	(b)	79.4	79.4	....	3.2	3.2	2,401.60	....
20	3,386	183.69	72.0	255.69	5.5	2.1	7.6	3,130.31	....
21	3,398	153.81	107.6	261.41	4.5	3.2	7.7	3,136.59	....
22	3,724	222.96	64.7	287.66	6.0	1.7	7.7	3,436.34	....
Total	17,270	621.25	453.4	1,074.65	3.6	2.6	6.2	16,195.35	....
Average	2,878	103.54	75.57	179.11	....	....	....	2,698.89	....

a Discarded. b No movement.

TABLE LXXX.—*Calories balances for Series IV*—Continued.

No. 11.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Mar. 20	3,553	110.63	69.6	180.23	3.1	2.0	5.1	3,372.77	....
21	3,193	80.53	75.6	156.13	2.5	2.4	4.9	3,036.87	....
22	3,152	110.82	91.4	202.22	3.5	2.9	6.4	2,949.78	....
23	(3,456)	Lost.	(73.1)	....	....	(2.1)	....	....	....
24	3,206	48.00	104.7	152.70	1.5	3.3	4.8	3,053.30	....
25	3,243	158.09	86.7	244.79	4.9	2.6	7.5	2,998.21	....
26	3,463	65.52	75.2	140.72	1.9	2.2	4.1	3,322.28	....
27	3,437	107.30	84.1	191.40	3.1	2.5	5.6	3,245.60	....
Total	23,247	680.89	(660.4)	1,268.19	3.0	....	5.5	21,978.81	....
	(26,703)	....	....	....	....	(2.5)	....	....	....
Average	3,321	97.27	(82.55)	181.17	....	....	....	3,139.83	....
	(3,338)	....	....	....	....	....	....	....	....
Preservative period (excluded).									
1903—Mar. 28	3,238	121.90	80.9	202.80	3.8	2.5	6.3	3,035.20	5.0
29	3,438	98.26	89.4	187.66	2.9	2.6	5.5	3,250.34	5.0
30	....	....	....	....	....	....	....	....	0.0
Total	6,676	220.16	170.3	390.46	3.3	2.5	5.8	6,285.54	1.0
Average	3,338	110.08	85.15	195.23	....	....	....	3,142.77	....
Fore period.									
1903—Mar. 31	701	(*a*)	63.0	63.00	....	9.0	9.0	638.00	0.0
Apr. 1	1,699	96.18	45.8	141.98	5.7	2.7	8.4	1,557.02	0.0
2	2,138	50.08	66.8	116.88	2.4	3.1	5.5	2,021.12	0.0
3	3,143	96.69	64.7	161.39	3.1	2.0	5.1	2,981.61	0.0
Total	7,681	242.95	240.3	483.25	3.2	3.1	6.3	7,197.75	0.0
Average	1,920	60.74	60.07	120.81	....	....	....	1,799.19	....
Preservative period.									
1903—Apr. 4	3,313	185.49	79.0	264.49	5.6	2.4	8.0	3,048.51	0.5
5	3,332	120.85	81.6	202.45	3.6	2.5	6.1	3,129.55	1.0
6	3,050	116.47	64.1	180.57	3.8	2.1	5.9	2,869.43	1.0
7	3,474	183.90	80.4	264.30	5.3	2.3	7.6	3,209.70	1.0
8	3,322	104.26	70.9	175.16	3.2	2.1	5.3	3,146.84	1.0
9	2,761	126.23	67.4	193.63	4.6	2.4	7.0	2,567.37	1.0
10	3,290	81.94	78.4	160.34	2.5	2.4	4.9	3,129.66	1.0
11	3,109	128.14	77.6	205.74	4.1	2.5	6.6	2,903.26	1.0
12	3,288	146.21	77.6	223.81	4.4	2.4	6.8	3,064.19	2.0
13	3,187	147.26	77.7	224.96	4.6	2.5	7.1	2,962.04	2.0
14	3,239	89.67	72.6	162.27	2.8	2.2	5.0	3,076.73	3.0
Total	35,365	1,430.42	827.3	2,257.72	4.1	2.3	6.4	33,107.28	14.5
Average	3,215	130.04	75.21	205.25	....	....	....	3,009.75	....
After period.									
1903—Apr. 15	3,214	50.94	67.6	118.54	1.6	2.1	3.7	3,095.46	....
16	3,052	49.00	66.8	115.80	1.6	2.2	3.8	2,936.20	....
17	3,105	(*a*)	73.4	73.40	....	2.4	2.4	3,031.60	....
18	2,775	328.30	80.3	408.60	11.8	2.9	14.7	2,366.40	....
19	3,064	42.96	71.5	114.46	1.4	2.3	3.7	2,949.54	....
20	2,930	138.14	69.0	207.14	4.7	2.4	7.1	2,722.86	....
21	3,246	40.53	81.8	122.33	1.3	2.5	3.8	3,123.67	....
22	3,231	113.97	72.6	186.57	3.5	2.3	5.8	3,044.43	....
Total	24,617	763.84	583.0	1,346.84	3.1	2.4	5.5	23,270.16	....
Average	3,077	95.48	72.88	168.36	....	....	....	2,908.64	....

a No movement.

TABLE LXXX.—*Calories balances for Series IV*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Mar. 20	2,732	158.88	68.4	227.28	5.8	2.5	8.3	2,504.72	....
21	2,927	246.30	85.7	332.00	8.4	2.9	11.3	2,595.00	....
22	3,071	63.43	82.5	145.93	2.1	2.7	4.8	2,925.07	....
23	3,198	206.60	88.1	294.70	6.4	2.8	9.2	2,903.30	....
24	2,986	167.58	69.6	237.18	5.6	2.3	7.9	2,748.82	....
25	3,374	178.58	74.3	252.88	5.3	2.2	7.5	3,121.12	....
26	3,379	138.76	87.1	225.86	4.1	2.6	6.7	3,153.14	....
27	3,350	188.91	77.6	266.51	5.7	2.3	8.0	3,083.49	....
Total	25,017	1,349.04	633.3	1,982.34	5.4	2.5	7.9	23,034.66	....
Average	3,127	168.63	79.2	247.79	....	....	....	2,879.21	....
Preservative period (excluded).									
1903—Mar. 28	3,183	93.57	76.3	169.87	2.9	2.4	5.3	3,013.13	0.5
29	3,244	141.12	80.1	221.22	4.3	2.5	6.8	3,022.78	.5
30	3,322	227.62	68.9	296.52	6.8	2.1	8.9	3,025.48	.5
31	(a)	....	....	....	....	....	....	....	.5
Total	9,749	462.31	225.3	687.61	4.7	2.3	7.0	9,061.39	2.0
Average	3,250	154.10	75.1	229.20	....	....	....	3,020.80	....
Fore period.									
1903—Apr. 3	1,913	104.85	65.5	170.35	5.5	3.4	8.9	1,742.65	0.0
4	3,397	94.49	67.0	161.49	2.8	2.0	4.8	3,235.51	0.0
5	3,365	133.52	74.1	207.62	4.0	2.2	6.2	3,157.38	0.0
Total	8,675	332.86	206.6	539.46	3.8	2.4	6.2	8,135.54	0.0
Average	2,892	110.95	68.9	179.82	....	....	....	2,712.18	....
Preservative period.									
1903—Apr. 6	3,359	174.60	79.8	254.40	5.2	2.4	7.6	3,104.60	1.0
7	3,311	146.36	77.2	223.56	4.4	2.3	6.7	3,117.44	1.0
8	3,189	37.28	67.5	104.78	1.2	2.1	3.3	3,084.22	1.0
9	3,291	41.39	78.5	119.89	1.2	2.4	3.6	3,171.11	1.0
10	2,516	89.32	74.2	163.52	3.6	2.9	6.5	2,352.48	1.0
11	2,868	(b)	57.2	57.20	....	2.0	2.0	2,810.80	1.0
12	3,175	161.52	74.1	235.62	5.1	2.3	7.4	2,939.38	2.0
13	3,430	161.06	67.4	228.46	4.7	2.0	6.7	3,201.54	2.0
14	2,885	100.55	74.1	174.65	3.5	2.6	6.1	2,710.35	3.0
Total	28,054	912.08	650.00	1,562.08	3.3	2.3	5.6	26,491.92	13.0
Average	3,117	101.34	72.22	173.56	....	....	....	2,943.44	....
After period.									
1903—Apr. 15	1,017	(b)	42.7	42.70	....	4.2	4.2	974.30	....
16	953	134.33	68.5	202.83	14.1	7.2	21.3	750.17	....
17	3,016	82.21	53.1	135.31	2.7	1.8	4.5	2,880.69	....
18	3,470	249.66	70.6	320.26	7.2	2.0	9.2	3,149.74	....
19	3,081	155.82	63.8	219.62	5.0	2.1	7.1	2,861.38	....
20	3,187	217.69	61.0	278.69	6.8	1.9	8.7	2,908.31	....
21	2,920	72.35	60.8	133.15	2.5	2.1	4.6	2,786.85	....
22	3,005	99.28	67.4	166.68	3.3	2.2	5.5	2,838.32	....
Total	20,649	1,011.31	487.90	1,499.21	4.9	2.4	7.3	19,149.76	....
Average	2,581	126.42	60.99	187.41	....	....	....	2,393.59	....

[a] Discarded. [b] No movement.

TABLE LXXXI.—*Summary of calories balances for Series IV.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 8	28,385	614.39	587.40	1,201.79	2.1	2.1	4.2	27,183.21	......
No. 9	25,946	1,052.22	719.60	1,771.82	4.1	2.8	6.9	24,174.18	......
No. 10	29,557	1,026.48	743.50	1,769.98	3.5	2.5	6.0	27,787.02	......
Total	83,888	2,693.09	2,050.50	4,743.59	3.2	2.5	5.7	79,144.41	......
Average	3,647	117.09	89.15	206.24	......	......	......	3,440.76	......
Preservative period.									
First subperiod:									
No. 8	15,122	715.81	330.40	1,046.21	4.7	2.2	6.9	14,075.79	2
No. 9	13,440	552.33	373.40	925.73	4.1	2.8	6.9	12,514.27	2
No. 10	15,134	822.27	363.60	1,185.87	5.4	2.4	7.8	13,948.13	2
Total	43,696	2,090.41	1,067.40	3,157.81	4.8	2.4	7.2	40,538.19	6
Average	3,641	174.20	88.95	263.15	......	......	......	3,377.85	......
Second subperiod:									
No. 8	14,159	530.61	326.40	857.01	3.8	2.3	6.1	13,301.99	4
No. 9	13,524	355.96	363.80	719.76	2.6	2.7	5.3	12,804.24	4
No. 10	15,174	547.28	343.90	891.18	3.6	2.3	5.9	14,282.82	4
Total	42,857	1,433.85	1,034.10	2,467.95	3.3	2.4	5.8	40,389.05	12
Average	3,571	119.49	86.17	205.66	......	......	......	3,365.34	......
Subperiods 1 and 2:									
No. 8	29,281	1,246.42	656.80	1,903.22	4.3	2.2	6.5	27,377.78	6
No. 9	26,964	908.29	737.20	1,645.49	3.4	2.7	6.1	25,318.51	6
No. 10	30,308	1,369.55	707.50	2,077.05	4.5	2.4	6.9	28,230.95	6
Total	86,553	3,524.26	2,101.50	5,625.76	4.1	2.4	6.5	80,927.24	18
Average	3,606	146.84	87.56	234.40	......	......	......	3,371.60	......
Third subperiod:									
No. 8	19,099	581.81	418.50	1,000.31	3.0	2.2	5.2	18,098.69	5
No. 9	16,833	647.95	471.80	1,119.75	3.9	2.8	6.7	15,713.25	5
No. 10	19,323	743.13	409.80	1,152.93	3.9	2.1	6.0	18,170.07	5
Total	55,255	1,972.89	1,300.10	3,272.99	3.6	2.3	5.9	51,982.01	15
Average	3,684	131.53	86.67	218.20	......	......	......	3,465.80	......
Subperiods 1, 2, and 3:									
No. 8	48,380	1,828.23	1,075.30	2,903.53	3.8	2.2	6.0	45,476.47	11
No. 9	43,797	1,556.24	1,209.00	2,765.24	3.6	2.7	6.3	41,031.76	11
No. 10	49,631	2,112.68	1,117.30	3,229.98	4.3	2.2	6.5	46,401.02	11
Total	141,808	5,497.15	3,401.60	8,898.76	3.9	2.4	6.3	132,909.25	33
Average	3,636	140.95	87.22	228.17	......	......	......	3,407.83	......
Fourth subperiod:									
No. 8	18,055	642.90	343.30	986.20	3.6	1.9	5.5	17,068.80	11
No. 9	16,745	615.51	447.50	1,063.01	2.6	3.7	6.3	15,681.99	11
No. 10	19,216	751.93	380.90	1,132.83	3.9	2.0	5.9	18,083.17	11
Total	54,016	2,010.34	1,171.70	3,182.04	3.7	2.2	5.9	50,833.96	33
Average	3,601	134.02	78.12	212.14	......	......	......	3,388.86	......
Entire preservative period:									
No. 8	66,435	2,471.13	1,418.60	3,889.73	3.7	2.2	5.9	62,545.27	22
No. 9	60,542	2,171.75	1,656.50	3,828.25	3.6	2.7	6.3	56,713.75	22
No. 10	68,847	2,864.61	1,498.20	4,362.81	4.1	2.2	6.3	64,484.19	22
Total	195,824	7,507.49	4,573.30	12,080.79	3.8	2.4	6.2	183,743.21	66
Average	3,626	139.03	84.69	223.72	......	......	......	3,402.28	......
After period.									
No. 8	27,762	1,039.74	620.10	1,659.84	3.8	2.2	6.0	26,102.16	......
No. 9	26,569	998.56	734.30	1,732.86	3.7	2.8	6.5	24,836.14	......
No. 10	17,270	621.25	453.40	1,074.65	3.6	2.6	6.2	16,195.35	......
Total	71,601	2,659.55	1,807.80	4,467.35	3.7	2.5	6.2	67,133.65	......
Average	3,255	120.89	82.17	203.06	......	......	......	3,051.94	......

TABLE LXXXI.—*Summary of calories balances for Series IV*—Continued.

Two men

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 11	7,681	242.95	240.3	483.25	3.2	3.1	6.3	7,197.75	0.0
No. 12	8,675	332.86	206.6	539.46	3.8	2.4	6.2	8,135.54	0.0
Total	16,356	575.81	446.90	1,022.71	3.5	2.8	6.3	15,333.29	0.0
Average	2,337	82.26	63.84	146.10	......	......	......	2,190.90	......
Preservative period.									
No. 11	35,365	1,430.42	827.3	2,257.72	4.1	2.3	6.4	33,107.28	14.5
No. 12	28,054	912.08	650.0	1,562.08	3.3	2.3	5.6	26,491.92	13.0
Total	63,419	2,342.50	1,477.30	3,819.80	3.7	2.3	6.0	59,599.20	27.5
Average	3,171	117.12	73.87	190.99	......	......	......	2,980.01	......
After period.									
No. 11	24,617	763.84	583.0	1,346.84	3.1	2.4	5.5	23,270.16	......
No. 12	20,649	1,011.34	487.9	1,499.24	4.9	2.4	7.3	19,149.76	......
Total	45,266	1,775.18	1,070.90	2,846.08	3.9	2.4	6.3	42,419.92	......
Average	2,829	110.95	66.93	177.88	......	......	......	2,651.12	......

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.									
No. 7	22,360	1,160.18	460.7	1,620.88	5.2	2.1	7.2	20,739.12	......
No. 8	28,385	614.39	587.4	1,201.79	2.1	2.1	4.2	27,183.21	......
No. 9	25,946	1,052.22	719.6	1,771.82	4.1	2.8	6.9	24,174.18	......
No. 10	29,557	1,026.48	743.5	1,769.98	3.5	2.5	6.0	27,787.02	......
No. 12	25,017	1,349.04	633.3	1,982.34	5.4	2.5	7.9	23,034.66	......
Total	131,265	5,202.31	3,144.5	8,346.81	4.0	2.4	6.4	122,918.19	......
Average	3,366	133.39	80.6	213.99	......	......	......	3,152.01	......
Preservative period.									
First subperiod:									
No. 7	11,702	765.10	260.0	1,025.10	6.5	2.2	8.8	10,676.90	2
No. 8	15,122	715.81	330.4	1,046.21	4.7	2.2	6.9	14,075.79	2
No. 9	13,440	552.33	373.4	925.73	4.1	2.8	6.9	12,514.27	2
No. 10	15,134	822.27	363.6	1,185.87	5.4	2.4	7.8	13,948.13	2
No. 12	9,749	462.31	225.3	687.61	4.7	2.3	7.0	9,061.39	2
Total	65,147	3,317.82	1,552.7	4,870.52	5.1	2.4	7.5	60,276.48	10
Average	3,429	174.62	81.7	256.32	......	......	......	3,172.68	......

TABLE LXXXII.—*Calories balances for Series V.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Apr. 24	....	Lost.	....	....	....	....	....	....	....
25	3,575	104.60	95.6	200.20	2.9	2.7	5.6	3,374.80	....
26	3,476	90.48	96.3	186.78	2.6	2.8	5.4	3,289.22	....
27	3,389	100.94	94.7	195.64	3.0	2.8	5.8	3,193.36	....
28	3,091	117.15	92.5	209.65	3.8	3.0	6.8	2,881.35	....
29	3,504	119.39	91.7	211.09	3.4	2.6	6.0	3,292.91	....
30	3,460	93.37	98.6	191.97	2.7	2.8	5.5	3,268.03	....
May 1	3,808	204.64	95.8	300.44	5.4	2.5	7.9	3,507.56	....
Total	24,303	830.57	665.20	1,495.77	3.4	2.7	6.2	22,807.23	....
Average	3,472	118.65	95.03	213.68	....	....	....	3,258.32	....
Preservative period.									
First subperiod:									
1903—May 2	3,336	208.97	96.6	305.57	6.3	2.9	9.2	3,030.43	0.5
3	3,440	56.51	101.3	157.81	1.6	2.9	4.6	3,282.19	.5
4	3,505	160.02	93.6	253.62	4.6	2.7	7.2	3,251.38	.5
5	3,715	112.69	93.2	205.89	3.0	2.5	5.5	3,509.11	.5
6	3,934	151.14	97.2	248.34	3.8	2.5	6.3	3,685.66	.5
7	3,847	213.24	96.5	309.74	5.5	2.5	8.1	3,537.26	.5
8	4,212	76.92	92.3	169.22	1.8	2.2	4.0	4,042.78	.5
9	4,047	156.25	90.9	247.15	3.9	2.2	6.1	3,799.85	.5
10	3,462	215.18	93.2	308.38	6.2	2.7	8.9	3,153.62	.5
11	3,459	110.00	91.1	201.10	3.2	2.6	5.8	3,257.90	.5
12	3,165	147.11	97.8	244.91	4.6	3.1	7.7	2,920.09	.5
13	3,312	108.61	89.1	197.71	3.3	2.7	6.0	3,114.29	.5
Total	43,434	1,716.64	1,132.8	2,849.44	4.0	2.6	6.6	40,584.56	6.0
Average	3,620	143.05	94.4	237.45	....	....	....	3,382.55	....
Second subperiod:									
1903—May 14	3,472	122.06	100.9	222.96	3.5	2.9	6.4	3,249.04	0.5
15	3,294	188.33	89.6	277.93	5.7	2.7	8.4	3,016.07	.5
16	3,218	175.86	95.5	271.36	5.5	3.0	8.4	2,946.64	.5
17	3,425	49.14	91.6	140.74	1.4	2.7	4.1	3,284.26	.5
18	3,217	113.51	92.8	206.31	3.5	2.9	6.4	3,010.69	.5
19	3,481	113.12	94.8	207.92	3.2	2.7	6.0	3,273.08	.5
20	3,443	174.27	88.3	262.57	5.1	2.6	7.6	3,180.43	.5
21	3,445	121.26	96.0	217.26	3.5	2.8	6.3	3,227.74	.5
22	3,218	123.65	96.2	219.85	3.8	3.0	6.8	2,998.15	.5
23	3,498	105.12	99.2	204.32	3.0	2.8	5.8	3,293.68	.5
24	3,711	140.62	95.7	236.32	3.8	2.6	6.4	3,474.68	.5
25	3,266	111.30	99.2	210.50	3.4	3.0	6.4	3,055.50	.5
Total	40,688	1,538.24	1,139.8	2,678.04	3.8	2.8	6.6	38,009.96	6.0
Average	3,391	128.19	94.9	223.17	....	....	....	3,167.83	....
Subperiods 1 and 2:									
Total	84,122	3,254.88	2,272.60	5,527.48	3.9	2.7	6.6	78,594.52	12.0
Average	3,505	135.62	94.69	230.31	....	....	....	3,274.69	....
Third subperiod:									
1903—May 26	3,330	186.68	94.9	281.58	5.6	2.8	8.5	3,048.42	0.5
27	3,126	101.14	101.9	203.04	3.2	3.3	6.5	2,922.96	.5
28	3,229	156.52	97.7	254.22	4.8	3.0	7.9	2,974.78	.5
29	3,654	115.41	95.9	211.31	3.2	2.6	5.8	3,442.69	.5
30	2,949	110.89	97.6	208.49	3.8	3.3	7.1	2,740.51	.5
31	(3,277)	Lost.	(90.8)	....	....	(2.8)	....	....	.5
June 1	3,333	239.43	97.7	337.13	7.2	2.9	10.1	2,995.87	.5
2	3,251	116.02	99.3	215.32	3.6	3.1	6.6	3,035.68	.5
3	3,320	153.77	97.8	251.57	4.6	2.9	7.6	3,068.43	.5
4	3,559	133.14	106.7	239.84	3.7	3.0	6.7	3,319.16	.5
5	3,441	145.91	96.3	242.21	4.2	2.8	7.0	3,198.79	.5
6	3,187	131.11	102.4	233.51	4.1	3.2	7.3	2,953.49	.5
Total	36,379	1,590.02	....	2,678.22	4.4	....	7.4	33,700.78	6.0
	(39,656)	....	(1,179.0)	....	....	(3.0)	....	....	....
Average	3,307	144.55	....	243.47	....	....	....	3,063.53	....
	(3,305)	....	(98.2)	....	....	....	....	....	....

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 1—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
Total	120,501	4,844.90		8,205.70	4.0		6.8	112,295.30	18.0
	(123,778)		(3,451.6)			(2.8)			
Average	3,443	138.43		234.45				3,208.55	
	(3,438)		(95.9)						
Fourth subperiod:									
1903—June 7	3,449	118.25	97.2	215.45	3.4	2.8	6.2	3,233.55	0.5
8	3,162	138.44	92.5	230.94	4.4	2.9	7.3	2,931.06	.5
9	3,696	163.31	86.9	250.21	4.4	2.4	6.8	3,445.79	.5
10	3,519	161.82	91.8	253.62	4.6	2.6	7.2	3,265.38	.5
11	3,407	177.53	96.1	273.63	5.2	2.8	8.0	3,133.37	.5
12	3,450	189.43	96.2	285.63	5.5	2.8	8.3	3,164.37	.5
13	3,239	173.14	100.1	273.24	5.3	3.1	8.4	2,965.76	.5
14	3,279	99.77	99.3	199.07	3.0	3.0	6.1	3,079.93	.5
15	3,162	88.88	100.4	189.28	2.8	3.2	6.0	2,972.72	.5
16	3,436	217.50	98.4	315.90	6.3	2.9	9.2	3,120.10	.5
17	3,452	164.30	92.0	256.30	4.8	2.7	7.4	3,195.70	.5
18	3,527	202.84	96.3	299.14	5.8	2.7	8.5	3,227.86	.5
19	3,682	259.22	93.5	352.72	7.0	2.5	9.6	3,329.28	.5
20	3,515	168.13	89.3	257.43	4.8	2.5	7.3	3,257.57	.5
Total	47,975	2,322.56	1,330.0	3,652.56	4.8	2.8	7.6	44,322.44	7.0
Average	3,427	165.90	95.0	260.90				3,166.10	
Entire preservative period:									
Total	168,476	7,167.46		11,858.26	4.3		7.0	156,617.74	25.0
	(171,753)		(4,781.6)			(2.8)			
Average	3,438	146.27		242.01				3,195.99	
	(3,435)		(95.6)						
After period.									
1903—June 21	3,250	266.83	98.2	365.03	8.2	3.0	11.2	2,884.97	
22	3,483	108.42	87.2	195.62	3.1	2.5	5.6	3,287.38	
23	3,539	230.16	91.7	321.86	6.5	2.6	9.1	3,217.14	
24	3,369	209.46	98.3	307.76	6.2	2.9	9.1	3,061.24	
25	3,536	188.26	95.9	284.16	5.3	2.7	8.0	3,251.84	
26	3,079	298.26	89.1	387.36	9.7	2.9	12.6	2,691.64	
27	(3,298)	Lost.	(95.3)			(2.9)			
28	3,527	165.88	96.4	262.28	4.7	2.7	7.4	3,264.72	
29	3,240	150.80	100.8	251.60	4.7	3.1	7.8	2,988.40	
Total	27,023	1,618.07		2,375.67	6.0		8.8	24,647.33	
	(30,321)		(852.9)			(2.8)			
Average	3,378	202.26		296.96				3,081.04	
	(3,369)		(94.8)						

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Apr. 24	3,731	123.37	79.1	202.47	3.3	2.1	5.4	3,528.53	......
25	3,577	122.18	87.2	209.38	3.4	2.4	5.9	3,367.62	......
26	3,492	136.31	78.7	215.01	3.9	2.3	6.2	3,276.99	......
27	3,313	([a])	84.7	84.70	....	2.6	2.6	3,228.30	......
28	(3,149)	Lost.	(84.2)	....	....	(2.6)	....	....	......
29	2,969	68.35	84.2	152.55	2.3	2.8	5.1	2,816.45	......
30	3,064	87.64	80.6	168.24	2.9	2.6	5.5	2,895.76	......
May 1	3,238	104.47	80.5	184.97	3.2	2.5	5.7	3,053.03	......
Total	23,384	642.32	....	1,217.32	2.7	......	5.2	22,166.68	......
	(26,533)	....	(659.2)	....	....	(2.5)	....	....	......
Average	3,341	91.76	....	173.90	....	....	....	3,167.10	......
	(3,317)	....	(82.4)	....	....	....	....	....	......
Preservative period.									
First subperiod:									
1903—May 2	3,122	125.89	84.5	210.39	4.0	2.7	6.7	2,911.61	0.5
3	3,515	129.62	82.4	212.02	3.7	2.3	6.0	3,302.98	.5
4	3,420	81.10	93.1	174.20	2.4	2.7	5.1	3,245.80	.5
5	3,433	91.27	82.3	173.57	2.7	2.4	5.1	3,259.43	.5
6	3,716	112.19	91.2	203.39	3.0	2.5	5.5	3,512.61	.5
7	3,383	140.96	74.7	215.66	4.2	2.2	6.4	3,167.34	.5
8	3,582	108.45	78.1	186.55	3.0	2.2	5.2	3,395.45	.5
9	3,554	77.40	78.0	155.40	2.2	2.2	4.4	3,398.60	.5
10	3,014	112.62	68.9	181.52	3.7	2.3	6.0	2,832.48	.5
11	3,196	129.55	72.5	202.05	4.1	2.3	6.3	2,993.95	.5
12	3,283	113.32	82.8	196.12	3.5	2.5	6.0	3,086.88	.5
13	3,419	91.41	72.7	164.11	2.7	2.1	4.8	3,254.89	.5
Total	40,637	1,313.78	961.2	2,274.98	3.2	2.4	5.6	38,362.02	6.0
Average	3,386	109.48	80.1	189.58	....	....	....	3,196.42	......
Second subperiod:									
1903—May 14	2,886	103.79	79.4	183.19	3.6	2.8	6.3	2,702.81	0.5
15	3,391	109.83	74.9	184.73	3.2	2.2	5.4	3,206.27	.5
16	3,364	102.63	84.7	187.33	3.1	2.5	5.6	3,176.67	.5
17	2,695	93.29	74.3	167.59	3.5	2.8	6.2	2,527.41	.5
18	3,563	103.28	80.7	183.98	2.9	2.3	5.2	3,379.02	.5
19	3,051	125.15	73.7	198.85	4.1	2.4	6.5	2,852.15	.5
20	2,662	87.26	78.7	165.96	3.3	3.0	6.2	2,496.04	.5
21	3,104	85.59	71.6	157.19	2.8	2.3	5.1	2,946.81	.5
22	2,974	92.66	70.1	162.76	3.1	2.4	5.5	2,811.24	.5
23	2,875	125.12	78.0	203.12	4.4	2.7	7.1	2,671.88	.5
24	2,911	81.15	70.0	151.15	2.8	2.4	5.2	2,759.85	.5
25	3,180	96.67	71.2	167.87	3.0	2.2	5.3	3,012.13	.5
Total	36,656	1,206.42	907.3	2,113.72	3.3	2.5	5.8	34,542.28	6.0
Average	3,055	100.54	75.6	176.14	....	....	....	2,878.86	......
Subperiods 1 and 2:									
Total	77,293	2,520.20	1,868.5	4,388.70	3.3	2.4	5.7	72,904.30	12.0
Average	3,221	105.01	77.9	182.86	....	....	....	3,038.14	......
Third subperiod:									
1903—May 26	2,800	123.70	77.7	201.40	4.4	2.8	7.2	2,598.60	0.5
27	2,968	86.90	77.2	164.10	2.9	2.6	5.5	2,803.90	.5
28	2,756	157.37	66.6	223.97	5.7	2.4	8.1	2,532.03	.5
29	2,699	53.93	76.0	129.93	2.0	2.8	4.8	2,569.07	.5
30	2,332	91.57	80.3	171.87	3.9	3.4	7.4	2,160.13	.5
31	2,348	87.00	77.3	164.30	3.7	3.3	7.0	2,183.70	.5
June 1	2,495	154.71	73.0	227.71	6.2	2.9	9.1	2,267.29	.5
2	2,733	85.88	63.5	149.38	3.1	2.3	5.5	2,583.62	.5
3	1,853	114.83	61.6	176.43	6.2	3.3	9.5	1,676.57	.5
4	2,484	77.71	59.8	137.51	3.1	2.4	5.5	2,346.49	.5
5	1,862	53.64	55.2	108.84	2.9	3.0	5.8	1,753.16	.5
6	2,517	115.78	68.5	184.28	4.6	2.7	7.3	2,332.72	.5
Total	29,847	1,203.02	836.7	2,039.72	4.0	2.8	6.8	27,807.28	6.0
Average	2,487	100.26	69.7	169.98	....	....	....	2,317.02	......

[a] No movement.

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 2—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.									
Subperiods 1, 2, and 3:	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
Total	107,140	3,723.22	2,705.2	6,428.42	3.5	2.5	6.0	100,711.58	18.0
Average	2,976	103.42	75.1	178.57	....	....	....	2,797.43	....
Fourth subperiod:									
1903—June 7......	2,418	111.60	54.4	166.00	4.6	2.2	6.9	2,252.00	0.5
8......	2,738	26.98	56.8	83.78	9.9	2.1	3.1	2,654.22	.5
9......	1,970	143.19	49.1	192.29	7.3	2.5	9.8	1,777.71	.5
10......	2,551	70.01	58.4	128.41	2.7	2.3	5.0	2,422.59	.5
11......	2,417	72.25	61.0	133.25	3.0	2.5	5.5	2,283.75	.5
12......	2,997	212.42	55.7	268.12	7.1	1.9	8.9	2,728.88	.0
13......	2,400	102.07	62.5	164.57	4.3	2.6	6.9	2,235.43	.0
14......	2,589	39.13	60.6	99.73	1.5	2.3	3.9	2,489.27	.0
15......	2,787	114.68	56.6	171.28	4.1	2.0	6.1	2,615.72	.0
16......	2,584	104.69	76.6	181.29	4.1	3.0	7.0	2,402.71	.0
17......	2,764	161.78	69.6	231.38	5.9	2.5	8.4	2,532.62	.0
18......	2,390	129.64	71.0	200.64	5.4	3.0	8.4	2,189.36	.0
19......	3,007	152.84	68.9	221.74	5.1	2.3	7.4	2,785.26	.0
20......	2,712	268.85	67.9	336.75	9.9	2.5	12.4	2,375.25	.0
Total	36,324	1,710.13	869.1	2,579.23	4.7	2.4	7.1	33,744.77	2.5
Average	2,595	122.15	62.1	184.23	....	....	....	2,410.77	....
Entire preservative period:									
Total	143,464	5,433.35	3,574.3	9,007.65	3.8	2.5	6.3	134,456.35	20.5
Average	2,869	108.67	71.5	180.15	....	....	....	2,689.13	....
After period.									
1903—June 21........	2,287	112.77	68.7	181.47	4.9	3.0	7.9	2,105.53	....
22........	2,838	119.74	67.2	186.94	4.2	2.4	6.6	2,651.06	....
23........	2,863	145.04	67.2	212.24	5.1	2.3	7.4	2,650.76	....
24........	3,228	226.41	76.9	303.31	7.0	2.4	9.4	2,924.69	....
25........	2,902	180.51	79.1	259.61	6.2	2.7	8.9	2,642.39	....
26........	3,107	117.42	77.8	195.22	3.8	2.5	6.3	2,911.78	....
27........	3,145	170.11	94.2	264.31	5.4	3.0	8.4	2,880.69	....
28........	3,211	103.43	84.3	187.73	3.2	2.6	5.8	3,023.27	....
29........	2,930	98.38	82.3	180.68	3.4	2.8	6.2	2,749.32	....
Total	26,511	1,273.81	697.7	1,971.51	4.8	2.6	7.4	24,539.49	....
Average	2,946	141.53	77.5	219.06	....	....	....	2,726.94	....

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Apr. 24	....	Lost.	....	....					....
25	2,314	65.87	62.4	128.27	2.8	2.7	5.5	2,185.73	....
26	2,619	137.57	84.8	222.37	5.3	3.2	8.5	2,396.63	....
27	2,535	48.96	76.1	125.06	1.9	3.0	4.9	2,409.94	....
28	2,737	190.33	89.4	279.73	7.0	3.3	10.2	2,457.27	....
29	3,378	115.76	74.8	190.56	3.4	2.2	5.6	3,187.44	....
30	2,320	89.55	72.1	161.65	3.9	3.1	7.0	2,158.35	....
May 1	2,941	169.01	65.9	234.91	5.8	2.2	8.0	2,706.09	....
Total	18,844	817.05	525.5	1,342.55	4.3	2.8	7.1	17,501.45	....
Average	2,692	116.72	75.1	191.79	....	....	....	2,500.21	....
Preservative period.									
First subperiod:									
1903—May 2	1,775	106.63	75.8	182.43	6.0	4.3	10.3	1,592.57	0.5
3	2,462	124.69	64.7	189.39	5.1	2.6	7.7	2,272.61	.5
4	[2,688]	[119.88]	Lost.	....	[4.5]	....	....	....	.5
5	2,984	95.64	71.2	166.84	3.2	2.4	5.6	2,817.16	.5
6	3,211	79.00	68.9	147.90	2.5	2.1	4.6	3,063.10	.5
7	3,543	139.24	73.0	212.24	3.9	2.1	6.0	3,330.76	.5
8	3,766	103.66	65.7	169.36	2.8	1.7	4.5	3,596.64	.5
9	3,745	115.07	70.8	185.87	3.1	1.9	5.0	3,559.13	.5
10	3,154	108.08	73.7	181.78	3.4	2.3	5.8	2,972.22	.5
11	2,852	100.97	71.8	172.77	3.5	2.5	6.1	2,679.23	.5
12	3,223	173.64	69.6	243.24	5.4	2.2	7.5	2,979.76	.5
13	2,916	121.66	64.9	186.56	4.1	2.2	6.4	2,729.44	.5
Total	33,631	....	770.1	2,038.38	....	2.3	6.1	31,592.62	6.0
	[36,319]	[1,388.16]	....	....	[3.8]	....	....		....
Average	3,057	....	70.0	185.32	....	....	....	2,872.68	....
	[3,027]	[115.68]	....	....	....	....	....	....	....
Second subperiod:									
1903—May 14	2,861	143.52	71.5	215.02	5.0	2.5	7.5	2,645.98	0.5
15	2,994	105.61	73.4	179.01	3.5	2.5	6.0	2,814.99	.5
16	3,271	111.93	76.7	188.63	3.4	2.3	5.8	3,082.37	.5
17	2,852	158.83	88.0	246.83	5.6	3.1	8.7	2,605.17	.5
18	3,223	82.31	71.4	153.71	2.6	2.2	4.8	3,069.29	.5
19	2,621	114.53	64.4	178.93	4.4	2.5	6.8	2,442.07	.5
20	2,725	78.66	77.6	156.26	2.9	2.8	5.7	2,568.74	.5
21	3,387	119.24	88.3	207.54	3.5	2.6	6.1	3,179.46	.5
22	2,983	173.44	73.4	246.84	5.8	2.3	8.3	2,736.16	.5
23	2,928	109.52	69.1	178.62	3.7	2.4	6.1	2,749.38	.5
24	2,710	124.48	70.6	195.08	4.6	2.6	7.2	2,514.92	.5
25	2,472	115.74	76.3	192.04	4.7	3.1	7.8	2,279.96	.5
Total	35,027	1,437.81	900.7	2,338.51	4.1	2.6	6.7	32.688.49	6.0
Average	2,919	119.82	75.1	194.88	....	....	....	2,724.04	....
Subperiods 1 and 2:									
Total	68,658	....	1,670.8	4,376.89	....	2.4	6.4	64,281.11	12.0
	[71,346]	[2,825.97]	....	....	[4.0]	....	....		....
Average	2,985	....	72.6	190.30	....	....	....	2,794.83	....
	[2,973]	[117.75]	....	....	....	....	....	....	....
Third subperiod:									
1903—May 26	2,792	153.16	76.4	229.56	5.5	2.7	8.2	2,562.44	0.5
27	2,976	106.65	74.9	181.55	3.6	2.5	6.1	2,794.45	.5
28	3,140	179.19	80.9	260.09	5.7	2.6	8.3	2,879.91	.5
29	2,890	98.63	55.7	154.33	3.4	1.9	5.3	2,735.67	.5
30	2,526	177.76	98.3	276.06	7.0	3.9	10.9	2,249.94	.5
31	(2,922)	Lost.	(84.2)	....	....	(2.9)	....	....	.5
June 1	2,751	159.84	84.0	243.84	5.8	3.1	8.9	2,507.16	.5
2	2,897	60.01	76.3	136.31	2.1	2.6	4.7	2,760.69	.5
3	2,992	97.22	76.6	173.82	3.2	2.6	5.8	2,818.18	.5
4	3,124	121.41	76.1	197.51	3.9	2.4	6.3	2,926.49	.5
5	2,768	101.30	62.4	163.70	3.7	2.3	5.9	2,604.30	.5
6	3,064	107.04	75.8	182.84	3.5	2.5	6.0	2,881.16	.5
Total	31,920	1,362.21	....	2,199.61	4.3	....	6.9	29,720.39	6.0
	(34,842)	....	(921.6)	....	....	(2.6)	....		....
Average	2,902	123.83	....	199.93	....	....	....	2,702.07	....
	(2,904)	....	(75.1)	....	....	....	....	....	....

Table LXXXII.—*Calories balances for Series V*—Continued.

No. 3—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period— Continued.									
Subperiods 1, 2, and 3:	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
Total	100,578			6,576.50			6.5	94,001.50	18.0
	(103,500)		(2,592.4)			(2.5)			
	[103,266]	[4,188.11]			[4.0]				
Average	2,958			193.46				2,764.54	
	(2,957)		(74.1)						
	[2,950]	[119.66]							
Fourth subperiod:									
1903–June 7	3,033	49.54	79.1	128.64	1.6	2.6	4.2	2,904.36	0.5
8	3,001	154.07	73.0	227.07	5.1	2.4	7.6	2,773.93	.5
9	3,265	114.87	68.4	183.27	3.5	2.1	5.6	3,081.73	.5
10	3,135	125.05	63.7	188.75	4.0	2.0	6.0	2,946.25	.5
11	3,367	144.48	75.3	219.78	4.3	2.2	6.5	3,147.22	.5
12	2,988	65.07	75.0	140.07	2.2	2.5	4.7	2,847.93	.5
13	2,883	135.19	79.2	214.39	4.7	2.7	7.4	2,668.61	.5
14	2,860	139.13	81.6	220.73	4.9	2.9	7.7	2,639.27	.5
15	2,921	88.14	78.3	166.44	3.2	2.5	5.7	2,754.56	.5
16	2,817	190.00	78.1	268.10	6.7	2.8	9.5	2,548.90	.5
17	3,017	158.24	77.5	235.74	5.2	2.6	7.8	2,781.26	.5
18	3,181	214.06	73.4	287.46	6.7	2.3	9.0	2,893.54	.5
19	2,977	48.91	74.8	123.71	1.6	2.5	4.2	2,853.29	.5
20	3,039	248.18	73.7	321.88	8.2	2.4	10.6	2,717.12	.5
Total	42,484	1,874.93	1,051.1	2,926.03	4.4	2.5	6.9	39,557.97	7.0
Average	3,035	133.92	75.1	209.02				2,825.98	
Entire preservative period:									
Total	143,062			9,502.53			6.6	133,559.47	25.0
	(145,984)		(3,643.5)			(2.5)			
	[145,750]	[6,063.11]			[4.2]				
Average	2,980			197.97				2,782.03	
	(2,979)		(74.3)						
	[2,974]	[123.74]							
After period.									
1903–June 21	2,775	155.38	80.3	235.68	5.6	2.9	8.5	2,539.32	
22	3,036	150.54	61.5	212.04	5.0	2.0	7.0	2,823.96	
23	3,736	108.80	83.0	191.80	2.9	2.2	5.1	3,544.20	
24	3,071	249.98	82.1	332.08	8.1	2.7	10.8	2,738.92	
25	3,430	223.12	77.6	300.72	6.5	2.3	8.8	3,129.28	
26	3,472	171.83	82.9	254.73	4.9	2.4	7.3	3,217.27	
27	3,361	145.96	80.3	226.26	4.3	2.4	6.7	3,134.74	
28	3,810	211.89	81.0	292.89	5.6	2.1	7.7	3,517.11	
29	3,000	104.50	81.6	186.10	3.5	2.7	6.2	2,813.90	
Total	29,691	1,522.00	710.3	2,232.30	5.1	2.4	7.5	27,458.70	
Average	3,299	169.11	78.9	248.03				3,050.97	

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1—4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Apr. 24	3,595	81.54	67.6	149.14	2.3	1.9	4.1	3,445.86	....
25	2,851	(a)	77.2	77.20	....	2.7	2.7	2,773.80	....
26	2,768	135.74	72.1	207.84	4.9	2.6	7.5	2,560.16	....
27	2,795	120.91	86.6	207.51	4.3	3.1	7.4	2,587.49	....
28	3,244	103.38	86.6	189.98	3.2	2.7	5.9	3,054.02	....
29	1,779	82.76	73.7	156.46	4.7	....	8.8	1,622.54	....
30	2,721	129.56	76.2	205.76	4.8	2.8	7.6	2,515.24	....
May 1	2,668	192.93	88.6	281.53	7.2	3.3	10.6	2,386.47	....
Total	22,421	846.82	628.6	1,475.42	3.8	2.8	6.6	20,945.58	....
Average	2,803	105.85	78.6	184.43	....	....	....	2,618.57	....
Preservative period.									
First subperiod:									
1903—May 2	2,845	(a)	18.4	18.40	....	0.6	0.6	2,826.60	0.5
3	2,796	159.96	69.1	229.06	5.7	2.5	8.2	2,566.94	.5
4	2,741	83.32	80.5	163.82	3.0	2.9	6.0	2,577.18	.5
5	3,301	115.04	67.8	182.84	3.5	2.1	5.5	3,118.16	.5
6	3,049	76.80	84.1	160.90	2.5	2.8	5.3	2,888.10	.5
7	2,692	122.25	69.3	191.55	4.5	2.6	7.1	2,500.45	.5
8	3,239	122.39	73.2	195.59	3.8	2.3	6.0	3,043.41	.5
9	2,932	151.85	70.1	221.95	5.2	2.4	7.6	2,710.05	.5
10	2,414	61.56	71.7	133.26	2.6	3.0	5.5	2,280.74	.5
11	2,453	124.13	72.1	196.23	5.1	2.9	8.0	2,256.77	.5
12	2,530	133.04	76.9	209.94	5.3	3.0	8.3	2,320.06	.5
13	2,423	103.72	71.7	175.42	4.3	3.0	7.2	2,247.58	.5
Total	33,415	1,254.06	824.9	2,078.96	3.8	2.5	6.2	31,336.04	6.0
Average	2,785	104.50	68.7	173.25	....	....	....	2,611.75	....
Second subperiod:									
1903—May 14	2,616	127.04	88.5	215.54	4.9	3.4	8.2	2,400.46	0.5
15	2,990	115.33	67.8	183.13	3.9	2.3	6.1	2,806.87	.5
16	3,057	141.99	86.5	228.49	4.6	2.8	7.5	2,828.51	.5
17	2,500	109.34	80.2	189.54	4.4	3.2	7.6	2,310.46	.5
18	3,254	113.96	90.3	204.26	3.5	2.8	6.3	3,049.74	.5
19	2,852	262.64	83.8	346.44	9.2	2.9	12.1	2,505.56	.5
20	2,759	(a)	73.1	73.10	....	2.6	2.6	2,685.90	.5
21	2,952	39.38	81.5	120.88	1.3	2.8	4.1	2,831.12	.5
22	2,904	193.03	82.3	275.33	6.6	2.8	9.5	2,628.67	.5
23	3,101	162.77	85.4	248.17	5.2	2.8	8.0	2,852.83	.5
24	2,966	106.28	80.6	186.88	3.6	2.7	6.3	2,779.12	.5
25	2,881	82.81	82.2	165.01	2.9	2.9	5.7	2,715.99	.5
Total	34,832	1,454.57	982.2	2,436.77	4.2	2.8	7.0	32,395.23	6.0
Average	2,903	121.21	81.85	203.06	....	....	....	2,699.94	....
Subperiods 1 and 2:									
Total	68,247	2,708.63	1,807.1	4,515.73	4.0	2.6	6.6	63,731.27	12.0
Average	2,844	112.86	75.3	188.16	....	....	....	2,655.94	....

a No movement.

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Apr. 24	4,117	118.60	82.3	200.90	2.9	2.0	4.9	3,916.10	......
25	3,586	42.61	94.5	137.11	1.2	2.6	3.8	3,448.86	......
26	3,655	185.78	91.6	277.38	5.1	2.5	7.6	3,377.62	......
27	3,871	205.75	192.7	398.45	5.3	5.0	10.3	3,472.55	......
28	4,254	(a)	90.4	90.40	....	2.1	2.1	4,163.60	......
29	3,723	91.99	94.4	186.39	2.5	2.5	5.0	3,536.61	......
30	3,795	158.59	98.1	256.69	4.2	2.6	6.8	3,538.31	......
May 1	3,888	183.19	95.2	278.39	4.7	2.5	7.2	3,609.61	......
Total	30,889	986.54	839.2	1,825.74	3.2	2.7	5.9	29,063.26	......
Average	3,861	123.32	104.9	228.22	....	....	....	3,632.78	......
Preservative period.									
First subperiod:									
1903—May 2	3,772	74.73	95.3	170.03	2.0	2.5	4.5	3,601.97	0.5
3	3,830	77.07	96.4	173.47	2.0	2.5	4.5	3,656.53	.5
4	3,730	207.16	93.7	300.86	5.6	2.5	8.1	3,429.14	.5
5	4,448	115.04	93.1	208.14	2.6	2.1	4.7	4,239.86	.5
6	4,284	50.50	93.2	143.70	1.2	2.2	3.4	4,140.30	.5
7	4,068	152.91	93.4	246.31	3.8	2.3	6.1	3,821.69	.5
8	4,885	158.13	93.6	251.73	3.2	1.9	5.2	4,633.27	.5
9	4,675	193.35	85.8	279.15	4.1	1.9	6.0	4,395.85	.5
10	3,825	177.94	84.8	262.74	4.7	2.2	6.9	3,562.26	.5
11	3,932	96.03	90.6	186.63	2.4	2.3	4.7	3,745.37	.5
12	4,220	132.32	82.5	214.82	3.1	2.0	5.1	4,005.18	.5
13	3,839	258.42	91.4	349.82	6.7	2.4	9.1	3,489.18	.5
Total	49,508	1,693.60	1,093.8	2,787.40	3.4	2.2	5.6	46,720.60	6.0
Average	4,126	141.13	91.2	232.33	....	....	....	3,893.67	......
Second subperiod:									
1903—May 14	3,401	(a)	85.2	85.20	....	2.5	2.5	3,315.80	0.5
15	4,046	173.47	82.5	255.97	4.3	2.0	6.3	3,790.03	.5
16	3,865	232.89	92.7	325.59	6.0	2.4	8.4	3,539.41	.5
17	3,250	(a)	97.1	97.10	....	3.0	3.0	3,152.90	.5
18	3,726	61.50	93.7	155.20	1.7	2.5	4.2	3,570.80	.5
19	3,339	(a)	85.5	85.50	....	2.6	2.6	3,253.50	.5
20	3,321	228.26	88.7	316.96	6.9	2.7	9.5	3,004.04	.5
21	3,952	(a)	93.9	93.90	....	2.4	2.4	3,858.10	.5
22	3,581	253.86	77.8	331.66	7.1	2.2	9.3	3,249.34	.5
23	3,407	258.02	86.5	344.52	7.6	2.5	10.1	3,062.48	.5
24	3,679	99.66	94.1	193.76	2.7	2.6	5.3	3,485.24	.5
25	(3,924)	Lost.	(80.8)	....	....	(2.1)	....	....	.5
Total	39,567	1,307.66	....	2,285.36	3.3	....	5.8	37,281.64	6.0
	(43,491)	....	(1,058.5)	....	....	(2.4)	....	....	......
Average	3,597	118.88	....	207.76	....	....	....	3,389.24	......
	(3,624)	....	(88.2)	....	....	....	....	....	......
Subperiods 1 and 2:									
Total	89,075	3,001.26	....	5,072.76	3.4	....	5.7	84,002.24	12.0
	(92,999)	....	(2,152.3)	....	....	(2.3)	....	....	......
Average	3,873	130.49	....	220.55	....	....	....	3,652.45	......
	(3,875)	....	(89.7)	....	....	....	....	....	......
Third subperiod:									
1903—May 26	3,379	70.14	93.0	163.14	2.1	2.8	1.8	3,215.86	0.5
27	1,791	(a)	82.3	82.30	....	4.6	4.6	1,708.70	.0
28	2,931	(a)	86.9	86.90	....	3.0	3.0	2,844.10	.5
29	3,254	261.48	78.2	339.68	8.0	2.4	10.4	2,914.32	.5
30	3,212	184.48	97.8	282.28	5.8	3.0	8.8	2,929.72	.5
31	3,176	191.82	93.9	285.72	6.0	3.0	9.0	2,890.28	.5
June 1	2,789	69.62	83.7	153.32	2.5	3.0	5.5	2,635.68	.5
2	3,086	169.67	91.5	261.17	5.5	3.0	8.5	2,821.83	.5
3	2,967	205.66	94.8	300.46	6.9	3.2	10.1	2,666.51	.5
4	3,353	76.19	94.9	171.09	2.3	2.8	5.1	3,181.91	.5
5	2,623	(a)	88.6	88.60	....	3.4	3.4	2,534.40	.5
6	3,418	255.01	106.0	361.01	7.5	3.1	10.6	3,056.99	.5
Total	35,979	1,484.07	1,091.6	2,575.67	4.1	3.0	7.2	33,403.33	5.5
Average	2,998	123.67	91.0	214.64	....	....	....	2,783.36	......

[a] No movement.

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 5—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
Total	125,054 (128,978)	4,485.33	.... (3,243.9)	7,648.43	3.6	.... (2.5)	6.1	117,405.57	17.5 ....
Average	3,573 (3,583)	128.15	.... (90.1)	218.55	....	....	....	3,354.47	....
Fourth subperiod:									
1903—June 7	3,330	(*a*)	74.6	74.60	....	2.2	2.2	3,255.40	0.5
8	3,268	(*a*)	76.2	76.20	....	2.3	2.3	3,191.80	.5
9	3,411	300.27	91.2	391.47	8.8	2.7	11.5	3,019.53	.5
10	3,439	(*a*)	95.6	95.60	....	2.8	2.8	3,343.40	.5
11	3,381	240.19	92.9	333.09	7.1	2.8	9.9	3,047.91	.5
12	3,493	98.42	94.8	193.22	2.8	2.7	5.5	3,299.78	.5
13	3,220	342.03	97.2	439.23	10.6	3.0	13.6	2,780.77	.5
14	2,925	(*a*)	79.6	79.60	....	2.7	2.7	2,845.40	.5
15	3,076	155.09	94.1	249.19	5.0	3.1	8.1	2,826.81	.5
16	3,172	108.28	91.1	199.38	3.4	2.9	6.3	2,972.62	.5
17	3,474	254.62	91.2	345.82	7.3	2.6	10.0	3,128.18	.5
18	3,506	210.10	92.1	302.20	6.0	2.6	8.6	3,203.80	.5
19	3,657	(*a*)	86.5	86.50	....	2.4	2.4	3,570.50	.5
20	3,084	292.99	90.9	383.89	9.5	2.9	12.4	2,700.11	.5
Total	46,436	2,001.99	1,248.0	3,249.99	4.3	2.7	7.0	43,186.01	7.0
Average	3,317	143.00	89.1	232.14	....	....	....	3,084.86	....
Entire preservative period:									
Total	171,490 (175,414)	6,487.32	.... (4,491.9)	10,898.42	3.8	.... (2.6)	6.4	160,591.50	24.5 ....
Average	3,500 (3,509)	132.39	.... (89.8)	222.42	....	....	....	3,277.58	....
After period.									
1903—June 21	3,247	(*a*)	88.1	88.10	....	2.7	2.7	3,158.90	....
22	3,338	185.27	77.9	263.17	5.6	2.3	7.9	3,074.83	....
23	3,491	74.66	88.1	162.76	2.1	2.5	4.7	3,328.24	....
24	3,652	199.00	86.2	285.20	5.4	2.4	7.8	3,366.80	....
25	3,721	275.42	95.2	370.62	7.4	2.6	10.0	3,350.38	....
26	3,419	195.66	80.4	276.06	5.7	2.4	8.1	3,142.94	....
27	3,460	140.83	83.4	224.23	4.1	2.4	6.5	3,235.77	....
28	3,201	226.05	87.2	313.25	7.1	2.7	9.8	2,887.75	....
29	3,011	74.88	89.1	163.98	2.4	3.0	5.4	2,847.02	....
Total	30,540	1,371.77	775.6	2,147.37	4.5	2.5	7.0	28,392.63	....
Average	3,393	152.42	86.2	238.60	....	....	....	3,154.40	....

a No movement.

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
1903—Apr. 24	(3,319)	Lost.	(46.0)	....	....	(1.4)	....	....	....
25	3,425	126.09	60.3	186.39	3.7	1.8	5.4	3,238.61	....
26	2,847	139.65	65.1	204.75	4.9	2.3	7.2	2,642.25	....
27	2,966	98.60	63.6	162.20	3.3	2.1	5.5	2,803.80	....
28	2,863	147.61	66.3	213.91	5.2	2.3	7.5	2,649.09	....
29	3,610	126.95	68.8	195.75	3.5	1.9	5.4	3,414.25	....
30	2,732	205.55	69.3	274.85	7.5	2.5	10.1	2,457.15	....
May 1	2,802	(*a*)	65.0	65.00	....	2.3	2.3	2,737.00	....
Total	21,245	844.45	....	1,302.85	4.0	....	6.1	19,942.15	....
	(24,564)	....	(504.4)	....	....	(2.1)	....	....	....
Average	3,035	120.64	....	186.12	....	....	....	2,848.88	....
	(3,070)	....	(63.0)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—May 2	2,712	154.33	67.9	222.23	5.6	2.4	8.0	2,549.77	0.5
3	3,722	154.84	67.8	222.64	4.2	1.8	6.0	3,499.36	.5
4	2,450	118.05	63.6	181.65	4.8	2.6	7.4	2,268.35	.5
5	3,281	85.20	59.0	144.20	2.6	1.8	4.4	3,136.80	.5
6	3,295	133.92	63.6	197.52	4.1	1.9	6.0	3,097.48	.5
7	2,993	225.34	63.3	288.64	7.5	2.1	9.6	2,704.36	.5
8	3,502	(*a*)	61.8	61.80	....	1.8	1.8	3,440.20	.0
9	3,225	232.27	70.2	302.47	7.2	2.2	9.4	2,922.53	.0
10	2,714	170.18	65.5	235.68	6.3	2.4	8.7	2,478.32	.5
11	2,861	43.78	66.9	110.68	1.5	2.3	3.9	2,750.32	.5
12	2,628	82.06	64.0	146.06	3.1	2.4	5.6	2,481.94	.5
13	2,762	140.71	68.0	208.71	5.1	2.5	7.6	2,553.29	.5
Total	36,205	1,540.68	781.6	2,322.28	4.3	2.2	6.4	33,882.72	5.0
Average	3,017	128.39	65.13	193.52	....	....	....	2,823.48	....
Second subperiod:									
1903—May 14	2,807	102.83	61.5	164.33	3.7	2.2	5.9	2,642.67	0.5
15	2,950	191.39	60.8	252.19	6.5	2.1	8.5	2,697.81	.5
16	2,568	105.99	68.0	173.99	4.1	2.6	6.8	2,391.01	.5
17	2,627	47.04	76.9	123.94	1.8	2.9	4.7	2,503.06	.5
18	3,043	134.30	64.5	198.80	4.4	2.1	6.5	2,844.20	.5
19	2,692	157.25	67.3	224.55	5.8	2.5	8.3	2,467.45	.5
20	2,657	130.29	64.7	194.99	4.9	2.4	7.3	2,462.01	.5
21	2,865	166.02	71.1	237.12	5.8	2.5	8.3	2,627.88	.5
22	3,158	109.42	73.8	183.22	3.5	2.3	5.8	2,974.78	.5
23	2,457	120.46	73.3	193.76	4.9	3.0	7.9	2,263.24	.5
24	3,201	175.25	70.0	245.25	5.5	2.2	7.7	2,955.75	.5
25	2,641	89.82	68.3	158.12	3.4	2.6	6.0	2,482.88	.5
Total	33,666	1,530.06	820.2	2,350.26	4.5	2.4	7.0	31,315.74	6.0
Average	2,806	127.50	68.4	195.86	....	....	....	2,610.14	....
Subperiods 1 and 2:									
Total	69,871	3,070.74	1,601.80	4,672.54	4.4	2.3	6.7	65,198.46	11.0
Average	2,911	127.95	66.74	194.69	....	....	....	2,716.31	....
Third subperiod:									
1903—May 26	1,984	76.84	70.8	147.64	3.9	3.6	7.4	1,836.36	0.5
27	2,532	(*a*)	67.0	67.00	....	2.6	2.6	2,465.00	.5
28	2,720	239.04	73.3	312.34	8.8	2.7	11.5	2,407.66	.5
29	2,905	251.41	64.6	316.01	8.7	2.2	10.9	2,588.99	.5
30	2,311	50.42	83.7	134.12	2.2	3.6	5.8	2,176.88	.5
31	2,617	97.28	60.1	157.38	3.7	2.3	6.0	2,459.62	.5
June 1	2,080	162.81	71.7	234.51	7.8	3.4	11.3	1,845.49	.5
2	2,760	163.72	75.3	239.02	5.9	2.7	8.7	2,520.98	.5
3	2,863	133.37	65.4	198.77	4.7	2.3	6.9	2,664.23	.5
4	3,083	82.24	73.0	155.24	2.7	2.4	5.0	2,927.76	.5
5	2,573	131.04	70.3	201.34	5.1	2.7	7.8	2,371.66	.5
6	2,585	71.92	69.3	141.22	2.8	2.7	5.5	2,443.78	.5
Total	31,013	1,460.09	844.50	2,304.59	4.7	2.7	7.4	28,708.41	6.0
Average	2,584	121.67	70.38	192.05	....	....	....	2,391.95	....

TABLE LXXXII.—*Calories balances for Series V*—Continued.

No. 6—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
Total	100,884	4,530.83	2,446.30	6,977.13	4.5	2.4	6.9	93,906.87	17.0
Average	2,802	125.86	67.95	193.81	......	......	......	2,608.19	......
Fourth subperiod:									
1903—June 7	2,994	158.19	69.3	227.49	5.3	2.3	7.6	2,766.51	0.5
8	2,739	157.85	62.1	219.95	5.8	2.3	8.0	2,519.05	.5
9	2,689	162.81	71.2	234.01	6.1	2.6	8.7	2,454.99	.5
10	2,921	56.44	73.6	130.04	1.9	2.5	4.5	2,790.96	.5
11	2,978	103.13	63.7	166.83	3.5	2.1	5.6	2,811.17	.5
12	2,666	139.23	73.7	212.93	5.2	2.8	8.0	2,453.07	.0
13	2,330	107.12	70.1	177.22	4.6	3.0	7.6	2,152.78	.0
14	2,613	202.93	70.7	273.63	7.8	2.7	10.5	2,339.37	.0
15	2,565	132.47	72.6	205.07	5.2	2.8	8.0	2,359.93	.0
16	2,580	138.90	69.9	208.80	5.4	2.7	8.1	2,371.20	.0
17	2,881	(*a*)	62.4	62.40	......	2.2	2.2	2,818.60	.0
18	2,929	253.68	71.5	325.18	8.7	2.4	11.1	2,603.82	.0
19	2,274	(*a*)	53.4	53.40	......	2.3	2.3	2,220.60	.0
20	(2,415)	Lost.	(145.6)	......	......	(6.0)	......	......	.0
Total	35,159 (37,574)	1,612.75	...... (1,029.8)	2,495.95	4.6	...... (2.7)	7.1	32,662.05	2.5 ......
Average	2,705 (2,684)	124.06	...... (73.6)	192.07	....	....	....	2,512.93	....
Entire preservative period:									
Total	136,043 (138,458)	6,143.58	...... (3,476.1)	9,474.08	4.5	...... (2.5)	7.0	126,568.92	19.5 ......
Average	2,776 (2,769)	125.38	...... (69.5)	193.35	....	....	....	2,582.65	....
After period.									
1903—June 21	2,642	127.45	145.6	273.05	4.8	5.5	10.3	2,368.95	......
22	2,713	246.84	71.7	318.54	9.1	2.6	11.7	2,394.46	......
23	2,775	172.19	72.6	244.79	6.2	2.6	8.8	2,530.21	......
24	2,780	266.78	65.9	332.68	9.6	2.4	12.0	2,447.32	......
25	2,953	(*a*)	76.2	76.20	......	2.6	2.6	2,876.80	......
26	2,768	57.77	59.1	116.87	2.1	2.1	4.2	2,651.13	......
27	2,753	334.49	69.0	403.49	12.2	2.5	14.7	2,349.51	......
28	3,200	117.03	67.8	184.83	3.7	2.1	5.8	3,015.17	......
29	2,808	(*a*)	59.5	59.50	......	2.1	2.1	2,748.50	......
Total	25,392	1,322.55	687.4	2,009.95	5.2	2.7	7.9	23,382.05	......
Average	2,821	146.95	76.38	223.33	......	......	......	2,597.67	......

a No movement.

TABLE LXXXIII.—*Summary of calories balances for Series V.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 1	24,303	830.57	665.2	1,495.77	3.4	2.7	6.2	22,807.23	......
No. 3	18,844	817.05	525.5	1,342.55	4.3	2.8	7.1	17,501.45	......
No. 5	30,889	986.54	839.2	1,825.74	3.2	2.7	5.9	29,063.26	......
Total	74,036	2,634.16	2,029.9	4,664.06	3.6	2.7	6.3	69,371.94	......
Average	3,365	119.73	92.3	212.00	......	......	......	3,153.00	......

TABLE LXXXIII.—*Summary of calories balances for Series V*—Continued.

Three men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period.									
First subperiod:	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 1	43,434	1,716.64	1,132.8	2,849.44	4.0	2.6	6.6	40,584.56	6.0
No. 3	33,631		770.1	2,038.38		2.3	6.1	31,592.62	6.0
	[36,319]	[1,388.16]			[3.8]				
No. 5	49,508	1,693.60	1,093.8	2,787.40	3.4	2.2	5.6	46,720.60	6.0
Total	126,573		2,996.7	7,675.22		2.4	6.1	118,897.78	18.0
	[129,261]	[4,798.40]			[3.7]				
Average	3,616		85.6	219.29				3,396.71	
	[3,591]	[133.29]							
Second subperiod:									
No. 1	40,688	1,538.24	1,139.8	2,678.04	3.8	2.8	6.6	38,009.96	6.0
No. 3	35,027	1,437.81	900.7	2,338.51	4.1	2.6	6.7	32,688.49	6.0
No. 5	39,567	1,307.66		2,285.36	3.3		5.8	37,281.64	6.0
	(43,491)		(1,058.5)			(2.4)			
Total	115,282	4,283.71		7,301.91	3.7		6.3	107,980.09	18.0
	(119,206)		(3,099.0)			(2.6)			
Average	3,294	122.39		208.63				3,085.37	
	(3,311)		(86.1)						
Subperiods 1 and 2:									
Total	241,855			14,977.13			6.2	226,877.87	36.0
	(245,779)		(6,095.7)			(2.5)			
	[244,543]	[9,082.11]			[3.7]				
Average	3,455			213.96				3,241.04	
	(3,462)		(85.9)						
	[3,444]	[127.92]							
Third subperiod:									
No. 1	36,379	1,590.02		2,678.22	4.4		7.4	33,700.78	6.0
	(39,656)		(1,179.0)			(3.0)			
No. 3	31,920	1,362.21		2,199.61	4.3		6.9	29,720.39	6.0
	(34,842)		921.6			(2.6)			
No. 5	35,979	1,484.07	1,091.6	2,575.67	4.1	3.0	7.2	33,403.33	5.5
Total	104,278	4,436.30		7,453.50	4.3		7.1	96,824.50	17.5
	(110,477)		(3,192.2)			(2.9)			
Average	3,067	130.48		219.22				2,847.78	
	(3,069)		(88.7)						
Subperiods 1, 2, and 3:									
Total	346,133			22,430.63			6.5	323,702.37	53.5
	(356,256)		(9,287.9)			(2.6)			
	[348,821]	[13,518.11]			[3.9]				
Average	3,328			215.68				3,112.32	
	(3,329)		(86.8)						
	[3,322]	[128.75]							
Fourth subperiod:									
No. 1	47,975	2,322.56	1,330.0	3,652.56	4.8	2.8	7.6	44,322.44	7.0
No. 3	42,484	1,874.93	1,051.1	2,926.03	4.4	2.5	6.9	39,557.97	7.0
No. 5	46,436	2,001.99	1,248.0	3,249.99	4.3	2.7	7.0	43,186.01	7.0
Total	136,895	6,199.48	3,629.1	9,828.58	4.5	2.7	7.2	127,066.42	21.0
Average	3,259	147.61	86.4	234.01				3,024.99	
Entire preservative period:									
Total	483,028			32,259.21			6.7	450,768.79	74.5
	(493,151)		(12,917.0)			(2.6)			
	[485,716]	[19,717.89]			[4.1]				
Average	3,308			220.95				3,087.05	
	(3,310)		(86.7)						
	[3,304]	[134.14]							
After period.									
No. 1	27,023	1,618.07		2,375.67	6.0		8.8	24,647.33	
	(30,321)		(852.9)			(2.8)			
No. 3	29,691	1,522.00	710.3	2,232.30	5.1	2.4	7.5	27,458.70	
No. 5	30,540	1,371.77	775.6	2,147.37	4.5	2.5	7.0	28,392.63	
Total	87,254	4,511.84		6,755.34	5.2		7.7	80,498.66	
	(90,552)		(2,338.8)			(2.6)			
Average	3,356	173.53		259.82				3,096.18	
	(3,354)		(86.6)						

TABLE LXXXIII.—*Summary of calories balances for Series V*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1 -4)	9 Preservative administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 1	24,303	830.57	665.2	1,495.77	3.4	2.7	6.2	22,807.23	
No. 2	23,384	642.32		1,217.32	2.7		5.2	22,166.68	
	(26,533)		(659.2)			(2.5)			
No. 3	18,844	817.05	525.5	1,342.55	4.3	2.8	7.1	17,501.45	
No. 5	30,889	986.54	839.2	1,825.74	3.2	2.7	5.9	29,063.26	
No. 6	21,245	844.45		1,302.85	4.0		6.1	19,942.15	
	(24,564)		(504.4)			(2.1)			
Total	118,665	4,120.93		7,184.23	3.5		6.1	111,480.77	
	(125,133)		(3,193.5)			(2.6)			
Average	3,296	114.47		199.56				3,096.44	
	(3,293)		(84.0)						
Preservative period.									
First subperiod:									
No. 1	43,434	1,716.64	1,132.8	2,849.44	4.0	2.6	6.6	40,584.56	6.0
No. 2	40,637	1,313.78	961.2	2,274.98	3.2	2.4	5.6	38,362.02	6.0
No. 3	33,631		770.1	2,038.38		2.3	6.1	31,592.62	6.0
	[36,319]	[1,388.16]			[3.8]				
No. 5	49,508	1,693.60	1,093.8	2,787.40	3.4	2.2	5.6	46,720.60	6.0
No. 6	36,205	1,540.68	781.6	2,322.28	4.3	2.2	6.4	33,882.72	5.0
Total	203,415		4,739.5	12,272.48		2.3	6.0	191,142.52	29.0
	[206,103]	[7,652.86]			[3.7]				
Average	3,448		80.3	208.01				3,239.99	
	[3,435]	[127.55]							
Second subperiod:									
No. 1	40,688	1,538.24	1,139.8	2,678.04	3.8	2.8	6.6	38,009.96	6.0
No. 2	36,656	1,206.42	907.3	2,113.72	3.3	2.5	5.8	34,542.28	6.0
No. 3	35,027	1,437.81	900.7	2,338.51	4.1	2.6	6.7	32,688.49	6.0
No. 5	39,567	1,307.66		2,285.36	3.3		5.8	37,281.64	6.0
	(43,491)		(1,058.5)			(2.4)			
No. 6	33,666	1,530.06	820.2	2,350.26	4.5	2.4	7.0	31,315.74	6.0
Total	185,604	7,020.19		11,765.89	3.8		6.3	173,838.11	30.0
	(189,528)		(4,826.5)			(2.5)			
Average	3,146	118.99		199.42				2,946.58	
	(3,159)		(80.4)						
Subperiods 1 and 2:									
Total	389,019			24,038.37			6.2	364,980.63	59.0
	(392,943)		(9,566.0)			(2.4)			
	[391,707]	[14,673.05]			[3.7]				
Average	3,297			203.72				3,093.28	
	(3,302)		(80.4)						
	[3,292]	[123.30]							
Third subperiod:									
No. 1	36,379	1,590.02		2,678.22	4.4		7.4	33,700.78	6.0
	(39,656)		(1,179.0)			(3.0)			
No. 2	29,847	1,203.02	836.7	2,039.72	4.0	2.8	6.8	27,807.28	6.0
No. 3	31,920	1,362.21		2,199.61	4.3		6.9	29,720.39	6.0
	(34,842)		(921.6)			(2.6)			
No. 5	35,979	1,484.07	1,091.6	2,575.67	4.1	3.0	7.2	33,403.33	5.5
No. 6	31,013	1,460.09	844.5	2,304.59	4.7	2.7	7.4	28,708.41	6.0
Total	165,138	7,099.41		11,797.81	4.3		7.1	153,340.19	29.5
	(171,337)		(4,873.4)			(2.8)			
Average	2,847	122.40		203.41				2,643.59	
	(2,856)		(81.2)						
Subperiods 1, 2, and 3:									
Total	554,157			35,836.18			6.5	518,320.82	88.5
	(564,280)		(14,439.4)			(2.6)			
	[556,845]	[21,772.46]			[3.9]				
Average	3,149			203.61				2,945.39	
	(3,152)		(80.7)						
	[3,146]	[123.01]							

TABLE LXXXIII.—*Summary of calories balances for Series V*—Continued.

SIX MEN.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*	*Grams.*
No. 1	24,303	830.57	665.2	1,495.77	3.4	2.7	6.2	22,807.23	
No. 2	23,384	642.32		1,217.32	2.7		5.2	22,166.68	
	(26,533)		(659.2)			(2.5)			
No. 3	18,844	817.05	525.5	1,342.55	4.3	2.8	7.1	17,501.45	
No. 4	22,421	846.82	628.6	1,475.42	3.8	2.8	6.6	20,945.58	
No. 5	30,889	986.54	839.2	1,825.74	3.2	2.7	5.9	29,063.26	
No. 6	21,245	844.45		1,302.85	4.0		6.1	19,942.15	
	(24,564)		(501.4)			(2.1)			
Total	141,086	4,967.75		8,659.65	3.5		6.1	132,426.35	
	(147,554)		(3,822.1)			(2.6)			
Average	3,206	112.90		196.81				3,009.19	
	(3,208)		(83.1)						
Preservative period.									
First subperiod:									
No. 1	43,434	1,716.64	1,132.8	2,849.44	4.0	2.6	6.6	40,584.56	6.0
No. 2	40,637	1,313.78	961.2	2,274.98	3.2	2.4	5.6	38,362.02	6.0
No. 3	33,631		770.1	2,038.38		2.3	6.1	31,592.62	6.0
	[36,319]	[1,388.16]			[3.8]				
No. 4	33,415	1,254.06	824.9	2,078.96	3.8	2.5	6.2	31,336.04	6.0
No. 5	49,508	1,693.60	1,093.8	2,787.40	3.4	2.2	5.6	46,720.60	6.0
No. 6	36,205	1,540.68	781.6	2,322.28	4.3	2.2	3.4	33,882.72	5.0
Total	236,830		5,564.4	14,351.44		2.4	6.1	222,478.56	35.0
	[239,518]	[8,906.92]			[3.7]				
Average	3,336		78.4	202.13				3,133.87	
	[3,327]	[123.71]							
Second subperiod:									
No. 1	40,688	1,538.24	1,139.8	2,678.04	3.8	2.8	6.6	38,009.96	6.0
No. 2	36,656	1,206.42	907.3	2,113.72	3.3	2.5	5.8	31,542.28	6.0
No. 3	35,027	1,437.81	900.7	2,338.51	4.1	2.6	6.7	32,688.19	6.0
No. 4	34,832	1,451.57	982.2	2,436.77	4.2	2.8	7.0	32,395.23	6.0
No. 5	39,567	1,307.66		2,285.36	3.3		5.8	37,281.61	6.0
	(43,491)		(1,058.5)			(2.4)			
No. 6	33,666	1,530.06	820.2	2,350.26	4.5	2.4	7.0	31,315.74	6.0
Total	220,436	8,474.76		14,202.66	3.8		6.4	206,233.34	36.0
	(224,360)		(5,808.7)			(2.6)			
Average	3,105	119.36		200.04				2,904.96	
	(3,116)		(80.7)						
Subperiods 1 and 2:									
Total	457,266			28,554.10			6.2	428,711.90	71.0
	(461,190)		(11,373.1)			(2.5)			
	[459,954]	[17,381.68]			[3.8]				
Average	3,220			201.06				3,018.94	
	(3,225)		(79.5)						
	[3,216]	[121.55]							

TABLE LXXXIV.—*General summary of calories balances.*

Period and series.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)
Fore period.	*Calories.*	*Calories.*	*Calories.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Calories.*
Series II [a]	51,235	2,231.6	1,152.5	3,384.1	4.4	2.2	6.6	47,850.9
III	101,483			7,161.16			7.1	94,321.84
	(104,094)		(2,942.6)			(2.8)		
	[104,329]	[4,395.24]			[4.2]			
IV	83,888	2,693.09	2,050.5	4,743.59	3.2	2.5	5.7	79,144.41
V	74,036	2,634.16	2,029.9	4,664.06	3.6	2.7	6.3	69,371.94
Total	259,407			16,568.81			6.4	242,838.19
	(262,018)		(7,023.0)			(2.7)		
	[262,253]	[9,722.49]			[3.7]			
Average	3,326			212.42				3,113.58
	(3,317)		(88.9)					
	[3,320]	[123.07]						
Preservative period:								
Series II [a]	80,019	3,916.5		5,696.7	4.9		7.1	74,322.3
	(88,149)		(1,966.3)			(2.2)		
III	134,015	5,665.25		9,437.85	4.2		7.0	124,577.15
	(136,996)		(3,839.4)			(2.8)		
IV	195,824	7,507.49	4,573.3	12,080.79	3.8	2.4	6.2	183,743.21
V	483,028			32,259.21			6.7	450,768.79
	(493,151)		(12,917.0)			(2.6)		
	[485,716]	[19,717.89]			[4.1]			
Total	812,867			53,777.85			6.6	759,089.15
	(825,971)		(21,329.7)			(2.6)		
	[815,555]	[32,890.63]			[4.0]			
Average	3,291			217.72				3,073.28
	(3,291)		(84.98)					
	[3,289]	[132.62]						
After period:								
Series II [a]								
III	79,018			5,371.04			6.8	73,646.96
	(86,089)		(2,334.1)			(2.7)		
	[81,606]	[3,318.12]			[4.1]			
IV	71,601	2,659.55	1,807.8	4,467.35	3.7	2.5	6.2	67,133.65
V	87,254	4,511.84		6,755.34	5.2		7.7	80,498.66
	(90,552)		(2,338.8)			(2.6)		
Total	237,873			16,593.73			7.0	221,279.27
	(248,242)		(6,480.7)			(2.6)		
	[240,461]	[10,489.51]			[4.4]			
Average	3,172			221.25				2,950.75
	(3,142)		(82.03)					
	[3,164]	[138.02]						

[a] Series II not included in total; all members ill in after period.

SOLIDS TABLES.

TABLE LXXXV.—*Solids balances for Series I.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	600.4	34.2	64.205	98.405	5.7	10.7	16.4	501.995	....
17	603.7	22.3	58.868	81.168	3.7	9.8	13.4	522.532	....
18	630.0	20.5	60.302	80.802	3.3	9.6	12.8	549.198	....
19	597.3	23.6	62.740	86.342	4.0	10.5	14.5	510.958	....
20	643.3	36.0	123.259	185.959	4.9	9.6	14.5	1,098.141	....
21	640.8	26.7							....
Total	3,715.5	163.3	369.373	532.676	4.4	9.9	14.3	3,182.824	....
Average	619.2	27.2	61.563	88.779	....	....	....	530.421	....
Preservative period.									
First subperiod:									
1902—Dec. 22	602.8	29.6	69.820	99.420	4.9	11.6	16.5	503.380	1
23	664.5	21.3	59.723	81.023	3.2	9.0	12.2	583.477	1
24	655.5	27.7	71.564	99.264	4.2	10.9	15.1	556.236	1
25	689.5	26.8	67.970	94.770	3.9	9.9	13.7	594.730	1
26	710.0	21.3	59.082	80.382	3.0	8.3	11.3	629.618	1
Total	3,322.3	126.7	328.159	454.859	3.8	9.9	13.7	2,867.441	5
Average	664.5	25.3	65.632	90.972	....	....	....	573.528	....
Second subperiod:									
1902—Dec. 27	709.5	42.6	74.991	117.591	6.0	10.6	16.6	591.909	2
28	731.5	30.6	59.688	90.288	4.2	8.2	12.3	641.212	2
29	666.5	26.1	64.850	90.950	3.9	9.7	13.6	575.550	2
30	(698.5)	Lost.	(64.100)	....	....	....	....	....	2
Total	2,107.5	99.3	....	298.829	4.7	....	14.2	1,808.671	8
	(2,806.0)	....	(263.629)	....	....	(9.4)	....	....	....
Average	702.5	33.1	....	99.610	....	....	....	602.890	....
	(701.5)	....	(65.107)	....	....	....	....	....	....
Third subperiod:									
1902—Dec. 31	651.5	27.5	55.190	82.690	4.2	8.5	12.7	568.810	3
1903—Jan. 1	661.5	14.4	67.218	81.618	2.2	10.2	12.3	579.882	3
2	573.0	28.7	63.370	92.070	5.0	11.1	16.1	480.930	3
3	487.0	24.8	69.564	94.364	5.1	14.3	19.4	392.636	3
Total	2,373.0	95.4	255.342	350.742	4.0	10.8	14.8	2,022.258	12
Average	593.2	23.8	63.836	87.636	....	....	....	505.564	....
Entire preservative period:									
Total	7,802.8	321.4	....	1,104.430	4.1	....	14.2	6,698.370	25
	(8,501.3)	....	(847.130)	....	....	(10.0)	....	....	....
Average	650.2	26.8	....	92.036	....	....	....	558.164	....
	(653.9)	....	(65.164)	....	....	....	....	....	....
After period.									
1903—Jan. 4	711.0	29.6	60.210	89.810	4.2	8.5	12.6	621.190	....
5	679.5	28.9	64.982	93.882	4.3	9.6	13.8	585.618	....
6	671.5	42.1	65.450	107.550	6.3	9.7	16.0	563.950	....
7	694.0	38.0	61.028	99.028	5.5	8.8	14.3	594.972	....
8	672.5	46.5	69.468	115.968	6.9	10.3	17.2	556.532	....
9	(628.0)	Lost.	(62.670)	....	....	....	....	....	....
10	611.0	21.9	70.380	92.280	3.6	11.5	15.1	518.720	....
11	630.0	28.1	57.440	85.540	4.5	9.1	13.6	544.460	....
12	628.0	33.8	75.684	109.484	5.4	12.1	17.4	518.516	....
13	683.0	33.6	43.275	76.875	4.9	6.3	11.3	606.125	....
Total	5,980.5	....	....	870.417	5.1	....	14.6	5,110.083	....
	(6,608.5)	....	(630.287)	....	....	(9.5)	....	....	....
Average	664.5	....	....	96.669	....	....	....	567.831	....
	(660.8)	....	(63.029)	....	....	....	....	....	....

TABLE LXXXV.—*Solids balances for Series I*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	543.5	21.8	55.418	77.218	4.0	10.2	14.2	466.282	......
17	595.6	27.4	55.964	83.364	4.6	9.4	14.0	512.236	......
18	591.6	(a)	70.223	70.223	....	11.9	11.9	521.377	......
19	591.2	40.7	72.118	112.818	6.9	12.2	19.1	478.382	......
20	616.3	26.1	}128.600	178.100	3.8	10.0	13.8	1,114.000	......
21	675.8	23.4							
Total	3,614.0	139.4	382.323	521.723	3.9	10.6	14.4	3,092.277	......
Average	602.3	23.2	63.720	86.920	....	....	....	515.380	......
Preservative period.									
First subperiod:									
1902—Dec. 22	617.7	42.4	68.610	111.010	6.9	11.1	18.0	506.690	1
23	636.5	28.8	65.608	94.408	4.5	10.3	14.8	542.092	1
24	650.0	26.8	72.525	99.325	4.1	11.2	15.3	550.675	1
25	590.0	26.8	57.892	84.692	4.5	9.8	14.4	505.308	1
26	649.0	28.8	58.464	87.264	4.4	9.0	13.4	561.736	1
Total	3,143.2	153.6	323.099	476.699	4.9	10.3	15.2	2,666.501	5
Average	628.6	30.7	64.620	95.320	....	....	....	533.280	......
Second subperiod:									
1902—Dec. 27	612.0	32.8	61.530	94.330	5.4	10.1	15.4	517.670	2
28	677.0	43.5	56.870	100.370	6.4	8.4	14.8	576.630	2
29	638.0	29.7	59.920	89.620	4.7	9.4	14.0	548.380	2
30	653.0	22.3	65.590	87.890	3.4	10.0	13.5	565.110	2
Total	2,580.0	128.3	243.910	372.210	5.0	9.5	14.4	2,207.790	8
Average	645.0	32.1	60.978	93.078	....	....	....	551.922	......
Third subperiod:									
1902—Dec. 31	649.0	34.6	70.942	105.542	5.3	10.9	16.3	543.458	3
1903—Jan. 1	659.0	34.8	50.240	85.040	5.3	7.6	12.9	573.960	3
2	671.0	20.7	69.920	90.620	3.1	10.4	13.5	580.380	3
3	531.0	35.5	50.442	85.942	6.7	9.5	16.2	445.058	3
Total	2,510.0	125.6	241.544	367.144	5.0	9.6	14.6	2,142.856	12
Average	627.5	31.4	60.386	91.786	....	....	....	535.714	......
Entire preservative period:									
Total	8,233.2	407.5	808.553	1,216.053	4.9	9.8	14.6	7,017.147	25
Average	633.3	31.3	62.196	93.542	....	....	....	539.758	......
After period.									
1903—Jan. 4	520.0	14.1	55.844	69.944	2.7	10.7	13.4	450.056	......
5	552.0	27.5	52.273	79.773	5.0	9.5	14.5	472.227	......
6	570.0	31.1	64.302	95.402	5.5	11.3	16.7	474.598	......
7	671.0	18.5	65.640	84.140	2.8	9.8	12.5	586.860	......
8	604.0	32.9	58.190	91.090	5.4	9.6	15.1	512.910	......
9	656.0	26.3	61.232	87.532	4.0	9.3	13.3	568.468	......
10	693.0	30.7	64.943	95.643	4.4	9.4	13.8	597.357	......
11	737.5	50.9	61.405	112.305	6.9	8.3	15.2	625.195	......
12	731.0	26.5	55.833	82.333	3.6	7.6	11.3	648.667	......
13	775.0	31.6	81.402	113.002	4.1	10.5	14.6	661.998	......
Total	6,509.5	290.1	621.064	911.164	4.5	9.5	14.0	5,598.336	......
Average	651.0	29.0	62.106	91.106	....	....	....	559.884	......

a No movement.

TABLE LXXXV.—*Solids balances for Series I*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	671.8	23.6	55.800	79.400	3.5	8.3	11.8	592.400	......
17	661.4	38.5	43.465	81.965	5.8	6.6	12.4	579.435	......
18	674.1	18.4	54.182	72.582	2.7	8.0	10.8	601.518	......
19	645.7	11.9	71.308	83.208	1.1	11.0	12.9	562.592	......
20	744.5	28.2	115.570	151.770	2.6	8.5	11.1	1,215.430	......
21	622.7	8.0							
Total	4,020.2	128.6	340.325	468.925	3.2	8.5	11.7	3,551.375	......
Average	670.0	21.4	56.721	78.154	......	......	......	591.846	......
Preservative period.									
First subperiod:									
1902—Dec. 22	603.8	43.6	61.370	101.970	7.2	10.2	17.4	498.830	1.0
23	689.0	23.3	46.814	70.114	3.4	6.8	10.2	618.886	1.0
24	650.0	19.4	67.940	87.340	3.0	10.5	13.4	562.660	1.0
25	607.0	10.6	65.508	76.108	1.7	10.8	12.5	530.892	1.0
26	596.0	24.0	55.791	79.791	4.0	9.4	13.4	516.209	1.0
Total	3,145.8	120.9	297.423	418.323	3.8	9.5	13.3	2,727.477	5.0
Average	629.2	24.2	59.485	83.665	......	......	......	545.535	......
Second subperiod:									
1902—Dec. 27	652.0	27.5	52.170	79.670	4.2	8.0	12.2	572.330	2.0
28	636.0	26.9	54.544	81.444	4.2	8.6	12.8	554.556	2.0
29	639.0	24.4	53.136	77.536	3.8	8.3	12.1	561.464	2.0
30	627.0	12.1	53.100	65.200	1.9	8.5	10.4	561.800	2.0
Total	2,554.0	90.9	212.950	303.850	3.6	8.3	11.9	2,250.150	8.0
Average	638.4	22.7	53.238	75.962	......	......	......	562.438	......
Third subperiod:									
1902—Dec. 31	674.0	41.2	61.870	103.070	6.1	9.2	15.3	570.930	3.0
1903—Jan. 1	536.0	21.3	72.622	93.922	4.0	13.5	17.5	442.078	7.0
2	391.0	12.8	48.600	61.400	3.3	12.4	15.7	329.600	2.0
3	494.0	19.3	43.660	62.960	3.9	8.8	12.7	431.040	2.5
Total	2,095.0	94.6	226.752	321.352	4.5	10.8	15.3	1,773.648	14.5
Average	523.8	23.6	56.688	80.338	......	......	......	443.462	......
Entire preservative period:									
Total	7,794.8	306.4	737.125	1,043.525	3.9	9.5	13.4	6,751.275	27.5
Average	599.6	23.6	56.302	80.302	......	......	......	519.298	......
After period.									
1903—Jan. 4	588.0	28.2	44.805	73.005	4.8	7.6	12.4	514.995	......
5	548.0	9.7	51.744	61.444	1.8	9.4	11.2	486.556	......
6	640.0	13.5	58.800	72.300	2.1	9.2	11.3	567.700	......
7	668.0	37.7	62.564	100.264	5.6	9.4	15.0	567.736	......
8	660.0	22.0	54.780	76.780	3.3	8.3	11.6	583.220	......
9	613.0	19.8	58.370	78.170	3.2	9.5	12.8	534.830	......
10	665.0	33.3	55.160	88.460	5.0	8.3	13.3	576.540	......
11	722.0	16.3	58.474	74.774	2.3	8.1	10.4	647.226	......
12	693.0	26.1	63.122	89.222	3.8	9.1	12.9	603.778	......
13	749.0	8.2	62.818	71.018	1.1	8.4	9.5	677.982	......
Total	6,546.0	214.8	570.637	785.437	3.3	8.7	12.0	5,760.563	......
Average	654.6	21.5	57.064	78.544	......	......	......	576.056	......

TABLE LXXXV.—*Solids balances for Series I*—Continued.

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	607.5	16.4	56.828	73.228	2.7	9.4	12.1	534.272	......
17	(642.1)	Lost.	(60.532)	....	....	(9.4)	....	....	......
18	586.4	23.8	61.682	85.482	4.1	10.5	14.6	500.918	......
19	561.1	23.9	60.094	83.994	4.3	10.7	15.0	477.106	......
20	586.2	20.9	}116.425	171.825	5.5	11.5	16.9	844.675	......
21	430.3	34.5							
Total	2,771.5	119.5	....	414.529	4.3	....	15.0	2,356.971	......
	(3,413.6)	....	(355.561)	....	....	(10.4)	....	....	......
Average	554.3	23.9	....	82.906	....	....	....	471.394	......
	(568.9)	....	(59.260)	....	....	....	....	....	......
Preservative period.									
First subperiod:									
1902—Dec. 22	543.0	18.5	64.948	83.448	3.4	12.0	15.4	459.552	1.0
23	584.0	31.1	68.953	100.053	5.3	11.8	17.1	483.947	1.0
24	548.0	17.6	66.550	84.150	3.2	12.1	15.4	463.850	1.0
25	480.0	21.9	72.224	94.124	4.6	15.0	19.6	385.876	1.0
26	611.0	39.1	61.754	100.854	6.4	10.1	16.5	510.146	1.0
Total	2,766.0	128.2	334.429	462.629	4.6	12.1	16.7	2,303.371	5.0
Average	553.2	25.6	66.886	92.486	....	....	....	460.714	......
Second subperiod:									
1902—Dec. 27	573.0	25.3	59.058	84.358	4.4	10.3	14.7	488.642	2.0
28	582.0	28.7	61.722	90.422	4.9	10.6	15.5	491.578	2.0
29	576.0	28.9	59.690	88.590	5.0	10.4	15.4	487.410	2.0
30	576.0	26.9	57.848	84.748	4.7	10.0	14.7	491.252	2.0
Total	2,307.0	109.8	238.318	348.118	4.8	10.3	15.1	1,958.882	8.0
Average	576.8	27.4	59.580	86.980	....	....	....	489.820	......
Third subperiod:									
1902—Dec. 31	591.0	31.9	69.828	101.728	5.4	11.8	17.2	489.272	3.0
1903—Jan. 1	376.0	16.3	49.112	65.412	4.3	13.1	17.4	310.588	1.0
2	494.0	25.2	54.184	79.384	5.1	11.0	16.1	414.616	3.0
3	470.5	18.2	46.260	64.460	3.9	9.8	13.7	406.040	2.5
Total	1,931.5	91.6	219.384	310.984	4.7	11.4	16.1	1,620.516	9.5
Average	482.9	22.9	54.846	77.746	....	....	....	405.154	......
Entire preservative period:									
Total	7,004.5	329.6	792.131	1,121.731	4.7	11.3	16.0	5,882.769	22.5
Average	538.8	25.4	60.933	86.287	....	....	....	452.513	......
After period.									
1903—Jan. 4	321.0	25.1	42.910	68.010	7.8	13.4	21.2	252.990	......
5	438.0	20.2	45.800	66.000	4.6	10.5	15.1	372.000	......
6	452.0	22.9	47.725	70.625	5.1	10.6	15.6	381.375	......
7	529.0	26.7	53.580	80.280	5.0	10.1	15.2	448.720	......
8	520.0	28.9	50.770	79.670	5.6	9.8	15.3	440.330	......
9	538.0	33.8	46.785	80.585	6.3	8.7	15.0	457.415	......
10	532.0	17.7	46.235	63.935	3.3	8.7	12.0	468.065	......
11	654.0	20.4	44.269	64.669	3.1	6.8	9.9	589.331	......
12	615.0	46.8	58.077	104.877	7.6	9.4	17.1	510.123	......
13	659.0	52.2	48.225	100.425	7.9	7.3	15.2	558.575	......
Total	5,258.0	294.7	484.376	779.076	5.6	9.2	14.8	4,478.924	......
Average	525.8	29.5	48.438	77.938	....	....	....	447.862	......

TABLE LXXXV.—*Solids balances for Series I*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	578.6	16.3	48.745	65.045	2.8	8.4	11.2	513.555	....
17	562.2	23.7	50.670	74.370	4.2	9.0	13.2	487.830	....
18	581.4	26.6	55.375	81.975	4.6	9.5	14.1	499.425	....
19	574.8	33.5	56.580	90.080	5.8	9.8	15.7	484.720	....
20	607.9	23.5	}114.752	178.552	5.1	9.2	14.3	1,074.248	....
21	644.9	40.3							
Total	3,549.8	163.9	326.122	490.022	4.6	9.2	13.8	3,059.778	....
Average	591.6	27.3	54.354	81.654	....	....	....	509.946	....
Preservative period.									
First subperiod:									
1902—Dec. 22	554.8	29.4	55.742	85.142	5.3	10.0	15.3	469.658	1
23	649.0	32.8	63.287	96.087	5.1	9.8	14.8	552.913	1
24	635.0	25.6	57.058	82.658	4.0	9.0	13.0	552.342	1
25	600.0	30.6	54.178	84.778	5.1	9.0	14.1	515.222	1
26	637.0	21.4	57.678	79.078	3.4	9.1	12.4	557.922	1
Total	3,075.8	139.8	287.943	427.743	4.5	9.4	13.9	2,648.057	5
Average	615.2	28.0	57.589	85.589	....	....	....	529.611	....
Second subperiod:									
1902—Dec. 27	677.0	33.2	55.680	88.880	4.9	8.2	13.1	588.120	2
28	660.0	39.5	55.858	95.358	6.0	8.5	14.4	564.642	2
29	648.0	29.8	69.980	99.780	4.6	10.8	15.4	548.220	2
30	667.0	34.0	55.000	89.000	5.1	8.2	13.3	578.000	2
Total	2,652.0	136.5	236.518	373.018	5.1	8.9	14.1	2,278.982	8
Average	663.0	34.1	59.130	93.230	....	....	....	569.770	....
Third subperiod:									
1902—Dec. 31	597.0	54.5	70.920	125.420	9.1	11.9	21.0	471.580	3
1903—Jan. 1	716.0	37.7	51.381	89.081	5.3	7.2	12.4	626.919	3
2	570.0	33.3	57.084	90.384	5.8	10.0	15.9	479.616	3
3	585.0	33.8	58.407	92.207	5.8	10.0	15.8	492.793	3
Total	2,468.0	159.3	237.792	397.092	6.5	9.6	16.1	2,070.908	12
Average	617.0	39.8	59.448	99.248	....	....	....	517.752	....
Entire preservative period:									
Total	8,195.8	435.6	762.253	1,197.853	5.3	9.3	14.6	6,997.947	25
Average	630.4	33.5	58.635	92.143	....	....	....	538.257	....
After period.									
1903—Jan. 4	644.0	23.9	56.566	80.466	3.7	8.8	12.5	563.534	....
5	591.5	50.5	54.614	105.114	8.5	9.2	17.8	486.386	....
6	634.0	49.4	58.177	107.577	7.8	9.2	17.0	526.423	....
7	642.0	24.6	56.640	81.240	3.8	8.8	12.7	560.760	....
8	584.0	38.6	54.538	93.138	6.6	9.3	15.9	490.862	....
9	602.0	22.6	55.278	77.878	3.8	9.2	12.9	524.122	....
10	612.0	27.7	59.430	87.130	4.5	9.7	14.2	524.870	....
11	645.0	33.1	55.500	88.600	5.1	8.6	13.7	556.400	....
12	573.5	24.0	53.078	77.078	4.2	9.3	13.4	496.422	....
13	613.0	23.5	63.503	87.003	3.8	10.4	14.2	525.997	....
Total	6,141.0	317.9	567.324	885.224	5.2	9.2	14.4	5,255.776	....
Average	614.1	31.8	56.732	88.532	....	....	....	525.568	....

TABLE LXXXV.—*Solids balances for Series I*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1902—Dec. 16	448.7	44.0	48.155	92.155	9.8	10.7	20.5	356.545	......
17	540.7	(a)	51.500	51.500	....	9.5	9.5	489.200	......
18	575.7	23.0	53.390	76.390	4.0	9.3	13.3	499.310	......
19	468.2	25.6	54.930	80.530	5.5	11.7	17.2	387.670	......
20	379.2	29.7	} 85.818	144.018	6.5	9.5	16.0	755.582	......
21	520.4	28.5							
Total	2,932.9	150.8	293.793	444.593	5.1	10.0	15.2	2,488.307	......
Average	488.8	25.1	48.966	74.066	....	......	....	414.734	......
Preservative period.									
First subperiod:									
1902—Dec. 22	498.3	47.6	51.694	99.294	9.6	10.4	19.9	399.006	1
23	551.0	(a)	52.360	52.360	....	9.5	9.5	498.640	1
24	499.0	22.6	53.304	75.904	4.5	10.7	15.2	423.096	1
25	549.0	26.2	46.150	72.350	4.8	8.4	13.2	476.650	1
26	(556.0)	Lost.	(54.496)	....	....	(9.8)	....	....	1
Total	2,097.3	96.4	....	299.908	4.6	......	14.3	1,797.392	5
	(2,653.3)	....	(258.004)	....	....	(9.7)	....	....	......
Average	524.3	24.1	....	74.977	....	......	....	449.323	......
	(530.7)	....	(51.601)	....	....	......	....	....	......
Second subperiod:									
1902—Dec. 27	571.0	(a)	37.985	37.985	....	6.7	6.7	533.015	2
28	614.0	32.2	62.968	95.168	5.2	10.3	15.5	518.832	2
29	601.0	36.2	49.880	86.080	6.0	8.3	14.3	514.920	2
30	608.0	18.4	49.424	67.824	3.0	8.1	11.2	540.176	2
Total	2,394.0	86.8	200.257	287.057	3.6	8.4	12.0	2,106.943	8
Average	598.5	21.7	50.064	71.764	....	......	....	526.736	......
Third subperiod:									
1902—Dec. 31	567.0	30.8	57.250	88.050	5.4	10.1	15.5	478.950	3
1903—Jan. 1	634.0	35.2	49.420	84.620	5.6	7.8	13.3	549.380	3
2	550.0	28.1	49.595	77.695	5.1	9.0	14.1	472.305	3
3	516.0	24.0	30.258	54.258	4.7	5.9	10.5	461.742	3
Total	2,267.0	118.1	186.523	304.623	5.2	8.2	13.4	1,962.377	12
Average	566.8	29.5	46.632	76.156	....	......	....	490.644	......
Entire preservative period:									
Total	6,758.3	301.3	....	891.588	4.5	......	13.2	5,866.712	25
	(7,314.3)	....	(644.784)	....	....	(8.8)	....	....	......
Average	563.2	25.1	....	74.299	....	......	....	488.901	......
	(562.6)	....	(49.599)	....	....	......	....	....	......
After period.									
1903—Jan. 4	567.0	23.7	69.864	93.564	4.2	12.3	16.5	473.436	......
5	540.0	26.3	45.944	72.244	4.9	8.5	13.4	467.756	......
6	535.5	29.8	50.080	79.880	5.6	9.4	14.9	455.620	......
7	599.0	27.3	61.080	88.380	4.5	10.2	14.8	510.620	......
8	569.0	49.9	40.572	90.472	8.8	7.1	15.9	478.528	......
9	639.0	(a)	56.410	56.410	....	8.8	8.8	582.590	......
10	615.0	32.8	42.078	74.878	5.3	6.8	12.2	540.122	......
11	610.0	17.8	55.770	73.570	2.9	9.1	12.1	536.430	......
12	541.5	20.5	37.465	57.965	3.8	6.9	10.7	483.535	......
13	677.5	24.0	41.318	65.318	3.5	6.1	9.6	612.182	......
Total	5,893.5	252.1	500.581	752.681	4.3	8.5	12.8	5,140.819	......
Average	589.4	25.2	50.058	75.258	....	......	....	514.142	......

a No movement.

Table LXXXVI.—*Summary of solids balances for Series I.*

Six men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	3,715.5	163.3	369.376	532.676	4.4	9.9	14.3	3,182.824	
No. 2	3,614.0	139.4	382.323	521.723	3.9	10.6	14.4	3,092.277	
No. 3	4,020.2	128.6	340.325	468.925	3.2	8.5	11.7	3,551.275	
No. 4	2,771.5	119.5		414.529	4.3		15.0	2,356.971	
	(3,413.6)		(355.561)			(10.4)			
No. 5	3,549.8	163.9	326.122	490.022	4.6	9.2	13.8	3,059.778	
No. 6	2,932.9	150.8	293.793	444.593	5.1	10.0	15.2	2,488.307	
Total	20,603.9	865.5		2,872.468	4.2		13.9	17,731.432	
	(21,246.0)		(2,067.500)			(9.7)			
Average	589.0	24.7		82.042				506.958	
	(590.0)		(57.431)						
Preservative period.									
First subperiod:									
No. 1	3,322.3	126.7	328.159	454.859	3.8	9.9	13.7	2,867.441	5.0
No. 2	3,143.2	153.6	323.099	476.699	4.9	10.3	15.2	2,666.501	5.0
No. 3	3,145.8	120.9	297.423	418.323	3.8	9.5	13.3	2,727.477	5.0
No. 4	2,766.0	128.2	334.429	462.629	4.6	12.1	16.7	2,303.371	5.0
No. 5	3,075.8	139.8	287.943	427.743	4.5	9.4	13.9	2,648.057	5.0
No. 6	2,097.3	96.4		299.908	4.6		14.3	1,797.392	5.0
	(2,653.3)		(258.004)			(9.7)			
Total	17,550.4	765.6		2,540.161	4.4		14.5	15,010.239	30.0
	(18,106.4)		(1,829.057)			(10.1)			
Average	605.0	26.4		87.592				517.408	
	(604.0)		(60.969)						
Second subperiod:									
No. 1	2,107.5	99.3		298.829	4.7		14.2	1,808.671	8.0
	(2,806.0)		(263.629)			(9.4)			
No. 2	2,580.0	128.3	243.910	372.210	5.0	9.5	14.4	2,207.790	8.0
No. 3	2,554.0	90.9	212.950	303.850	3.6	8.3	11.9	2,250.150	8.0
No. 4	2,307.0	109.8	238.318	348.118	4.8	10.3	15.1	1,958.882	8.0
No. 5	2,652.0	136.5	236.518	373.018	5.1	8.9	14.1	2,278.982	8.0
No. 6	2,394.0	86.8	200.257	287.057	3.6	8.4	12.0	2,106.943	8.0
Total	14,594.5	651.6		1,983.082	4.5		13.6	12,611.418	48.0
	(15,293.0)		(1,395.582)			(9.1)			
Average	635.0	28.3		86.221				548.779	
	(637.0)		(58.149)						
Third subperiod:									
No. 1	2,373.0	95.4	255.342	350.742	4.0	10.8	14.8	2,022.258	12.0
No. 2	2,510.0	125.6	241.544	367.144	5.0	9.6	14.6	2,142.856	12.0
No. 3	2,095.0	94.6	226.752	321.352	4.5	10.8	15.3	1,773.648	14.5
No. 4	1,931.5	91.6	219.384	310.984	4.7	11.4	16.1	1,620.516	9.5
No. 5	2,468.0	159.3	237.792	397.092	6.5	9.6	16.1	2,070.908	12.0
No. 6	2,267.0	118.1	186.523	304.623	5.2	8.2	13.4	1,962.377	12.0
Total	13,644.5	684.6	1,367.337	2,051.937	5.0	10.0	15.0	11,592.563	72.0
Average	569.0	28.5	56.972	85.497				483.503	
Entire preservative period:									
No. 1	7,802.8	321.4		1,104.430	4.1		14.2	6,698.370	25.0
	(8,501.3)		(847.130)			(10.0)			
No. 2	8,233.2	407.5	808.553	1,216.053	4.9	9.8	14.6	7,017.147	25.0
No. 3	7,791.8	306.4	737.125	1,043.525	3.9	9.5	13.4	6,751.275	27.5
No. 4	7,004.5	329.6	792.131	1,121.731	4.7	11.3	16.0	5,882.769	22.5
No. 5	8,195.8	435.6	762.253	1,197.853	5.3	9.3	14.6	6,997.947	25.0
No. 6	6,758.3	301.3		891.588	4.5		13.2	5,866.712	25.0
	(7,314.3)		(644.784)			(8.8)			
Total	45,789.4	2,101.8		6,575.180	4.6		14.4	39,214.220	150.0
	(47,043.9)		(4,591.976)			(9.8)			
Average	602.5	27.6		86.516				515.984	
	(603.1)		(58.871)						
After period.									
No. 1	5,980.5	302.8		870.417	5.1		14.6	5,110.083	
	(6,608.5)		(630.287)			(9.5)			
No. 2	6,509.5	290.1	621.064	911.164	4.5	9.5	14.0	5,598.336	
No. 3	6,546.0	214.8	570.637	785.437	3.3	8.7	12.0	5,760.563	
No. 4	5,258.0	291.7	481.376	779.076	5.6	9.2	14.8	4,478.924	
No. 5	6,141.0	317.9	567.324	885.224	5.2	9.2	14.4	5,255.776	
No. 6	5,893.5	252.1	500.581	752.681	4.3	8.5	12.8	5,140.819	
Total	36,328.5	1,672.4		1,983.999	4.6		13.7	31,314.501	
	(36,956.5)		(3,374.269)			(9.1)			
Average	616.0	28.3		84.129				531.571	
	(616.0)		(56.238)						

TABLE LXXXVII.—*Solids balances for Series II.*

NO. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(585)	(a)	(68.870)	....	....	(11.8)	....	....	....
20	(660)	(a)	(56.012)	....	....	(8.5)	....	....	....
21	525	36.8	67.954	104.754	7.0	12.9	20.0	420.246	....
22	583	31.7	63.504	95.204	5.4	10.9	16.3	487.796	....
23	649	32.2	87.909	120.109	5.0	13.5	18.5	528.891	....
24	607	18.2	73.540	91.740	3.0	12.1	15.1	515.260	....
25	667	40.2	81.900	122.100	6.0	12.3	18.3	544.900	....
26	596	25.7	59.170	84.870	4.3	9.9	14.2	511.130	....
27	622	28.7	63.504	92.204	4.6	10.2	14.8	529.796	....
Total	4,249	213.5	....	710.954	5.0	....	16.7	3,538.019	....
	(5,494)	....	(622.363)	....	....	(11.3)	....	....	....
Average	607	30.5	....	101.563	....	....	....	505.437	....
	(610)	....	(69.151)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	654	66.3	69.237	135.537	10.1	10.6	20.7	518.463	1
29	644	17.5	50.490	67.990	2.7	7.8	10.6	576.010	1
30	581	31.4	66.217	97.617	5.4	11.4	16.8	483.383	1
31	574	64.0	66.498	130.498	11.1	11.6	22.7	443.502	1
Total	2,453	179.2	252.442	431.642	7.3	10.3	17.6	2,021.358	4
Average	613	44.8	63.111	107.911	....	....	....	505.089	....
Second subperiod:									
1903—Feb. 1	654	(b)	68.700	68.700	....	10.5	10.5	585.300	2
2	587	59.3	67.394	126.694	10.1	11.5	21.6	460.306	2
3	608	26.7	61.880	88.580	4.4	10.2	14.6	519.420	2
4	617	25.5	68.308	93.808	4.1	11.1	15.2	523.192	2
Total	2,466	111.5	266.282	377.782	4.5	10.8	15.3	2,088.218	8
Average	616	27.9	66.571	94.446	....	....	....	521.554	....
Subperiods 1 and 2:									
Total	4,919	290.7	518.724	809.424	5.9	10.5	16.5	4,109.576	12
Average	615	36.3	64.841	101.178	....	....	....	513.822	....
Third subperiod:									
1903—Feb. 5	610	33.3	53.675	86.975	5.5	8.8	14.3	523.025	3
6	594	30.2	60.303	90.503	5.1	10.2	15.2	503.497	3
7	646	40.9	75.768	116.668	6.3	11.7	18.1	529.332	3
8	620	33.2	56.057	89.257	5.4	9.0	14.4	530.743	3
Total	2,470	137.6	245.803	383.403	5.6	10.0	15.5	2,086.597	12
Average	618	34.4	61.451	95.851	....	....	....	522.149	....
Subperiods 1, 2, and 3:									
Total	7,389	428.3	764.527	1,192.827	5.8	10.3	16.1	6,196.173	24
Average	616	35.7	63.711	99.402	....	....	....	516.598	....

a Not collected. b No movement.

TABLE LXXXVII.—*Solids balances for Series II*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(604)	(a)	(73.930)	....	....	(12.2)	....	....	....
20	(807)	(a)	(58.890)	....	....	(7.3)	....	....	....
21	728	20.2	67.662	87.862	2.8	9.3	12.1	640.138	....
22	735	29.4	65.800	95.200	4.0	9.0	13.0	639.860	....
23	752	33.4	56.308	89.708	4.4	7.5	11.9	662.292	....
24	780	31.5	68.480	99.980	4.0	8.8	12.8	680.020	....
25	738	40.2	68.522	108.722	5.4	9.3	14.7	629.278	....
26	737	50.8	58.568	109.368	6.9	7.9	14.8	627.632	....
27	699	26.8	62.720	89.520	3.8	9.0	12.8	609.480	....
Total	5,169	232.3	....	680.360	4.5	....	13.2	4,488.640	....
	(6,580)	....	(580.880)	....	....	(8.8)	....	....	....
Average	738	33.2	....	97.209	....	....	....	640.791	....
	(731)	....	(64.542)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Jan. 28	759	29.0	70.248	99.248	3.8	9.3	13.1	659.752	1
29	(779)	Lost.	(61.585)	....	....	(7.9)	....	....	1
30	763	25.6	66.980	92.580	3.4	8.8	12.1	670.420	1
31	(700)	Lost.	(73.380)	....	....	(10.5)	....	....	1
Total	1,522	54.6	....	191.828	3.6	....	12.6	1,330.172	4
	(3,001)	....	(272.193)	....	....	(9.1)	....	....	....
Average	761	27.3	....	95.914	....	....	....	665.086	....
	(750)	....	(68.048)	....	....	....	....	....	....
Second subperiod:									
1903—Feb. 1	803	62.5	83.918	146.418	7.8	10.5	18.2	656.582	2
2	729	22.8	57.630	80.430	3.1	7.9	11.0	648.570	2
3	646	38.5	82.230	120.730	6.0	12.7	18.7	525.270	2
4	713	48.5	69.660	118.160	6.8	9.8	16.6	594.840	2
Total	2,891	172.3	293.438	465.738	6.0	10.2	16.1	2,425.262	8
Average	723	43.1	73.359	116.460	....	....	....	606.540	....
Subperiods 1 and 2:									
Total	4,413	226.9	....	657.566	5.1	....	14.9	3,755.434	12
	(5,892)	....	(565.631)	....	....	(9.6)	....	....	....
Average	736	37.8	....	109.578	....	....	....	626.422	....
	(736)	....	(70.704)	....	....	....	....	....	....
Third subperiod:									
1903—Feb. 5	711	54.5	81.404	135.904	7.4	11.0	18.3	605.096	3
6	701	(b)	70.050	70.050	....	10.0	10.0	630.950	3
7	723	54.5	71.270	125.770	7.5	9.9	17.4	597.230	3
8	736	(b)	68.450	68.450	....	9.3	9.3	667.550	3
Total	2,901	109.0	291.174	400.174	3.8	10.0	13.8	2,500.826	12
Average	725	27.2	72.793	99.993	....	....	....	625.006	....
Subperiods 1, 2, and 3:									
Total	7,314	335.9	....	1,057.740	4.6	....	14.5	6,256.260	24
	(8,793)	....	(856.805)	....	....	(9.7)	....	....	....
Average	731	33.6	....	105.774	....	....	....	625.226	....
	(733)	....	(71.400)	....	....	....	....	....	....

[a] Not collected. [b] No movement.

TABLE LXXXVII.—*Solids balances for Series II*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Jan. 19	(693)	(*a*)	(59.130)	....	....	(8.5)	....	....	......
20	(718)	(*a*)	(61.990)	....	....	(8.6)	....	....	......
21	666	23.4	73.762	97.162	3.5	11.1	14.6	568.838	......
22	741	28.3	53.929	82.229	3.8	7.3	11.1	658.771	......
23	726	32.9	58.800	91.700	4.5	8.1	12.6	634.300	......
24	759	(*b*)	59.815	59.815	....	7.9	7.9	699.185	......
25	815	30.0	58.648	88.648	3.7	7.2	10.9	726.352	......
26	703	57.1	58.490	115.590	8.1	8.3	16.4	587.410	......
27	750	17.0	42.670	59.670	2.3	5.7	8.0	690.330	......
Total	5,160	188.7	....	594.814	3.7	....	11.5	4,565.186	......
	(6,571)	....	(527.234)	....	....	(8.0)	....	....	......
Average	737	26.9	....	84.916	....	....	....	652.084	......
	(730)	....	(58.582)	....	....	....	....	....	......
Preservative period.									
First subperiod:									
1903—Jan. 28	722	27.9	63.919	91.819	3.9	8.9	12.7	630.181	1
29	752	27.6	71.102	98.702	3.7	9.5	13.1	653.298	1
30	682	26.0	71.000	97.000	3.8	10.4	14.2	585.000	1
31	677	42.7	62.019	104.719	6.3	9.2	15.5	572.281	1
Total	2,833	124.2	268.040	392.240	4.4	9.5	13.8	2,440.760	4
Average	708	31.0	67.010	98.010	....	....	....	609.990	......
Second subperiod:									
1903—Feb. 1	729	30.1	72.220	102.320	4.1	9.9	14.0	626.680	2
2	625	36.2	77.550	113.750	5.8	12.4	18.2	511.250	2
3	520	6.0	65.040	71.040	1.2	12.5	13.7	448.960	2
4	534	17.5	65.094	82.594	3.3	12.2	15.5	451.406	2
Total	2,408	89.8	279.904	369.704	3.7	11.6	15.4	2,038.296	8
Average	602	22.4	69.976	92.376	....	....	....	509.624	......
Subperiods 1 and 2:									
Total	5,241	214.0	547.944	761.944	4.1	10.5	14.5	4,479.056	12
Average	655	26.8	68.493	95.293	....	....	....	559.707	......
Third subperiod:									
1903—Feb. 5	604	27.5	66.241	93.741	4.6	11.0	15.5	510.259	3
6	355	10.7	61.579	72.279	3.0	17.3	20.4	282.721	0
7	233	23.0	38.586	61.586	9.9	16.6	26.4	171.414	0
8	187	23.2	49.095	72.295	....	....	....	114.705	0
Total	1,379	84.4	215.501	299.901	6.1	15.6	21.7	1,079.099	3
Average	345	21.1	53.875	74.975	....	....	....	270.025	......
Subperiods 1, 2, and 3:									
Total	6,620	298.4	763.445	1,061.845	4.5	11.5	16.0	5,558.155	15
Average	552	24.9	63.620	88.520	....	....	....	463.480	......

a Not collected. *b* No movement.

TABLE LXXXVIII.—*Summary of solids balances for Series II.*

Two men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 7	4,249	213.5	....	710.981	5.0	....	16.7	3,538.019	
	(5,494)	....	(622.363)		....	(11.3)	....	....	....
No. 10	5,169	232.3	....	680.360	4.5	....	13.2	4,488.640	
	(6,580)	....	(580.880)	....	....	(8.8)	....	....	....
Total	9,418	445.8	....	1,391.341	4.7	....	14.8	8,026.659	....
	(12,074)	....	(1,203.243)	....	....	(10.0)	....	....	....
Average	673	31.8	....	99.339	....	....	....	573.661	....
	(671)	....	(66.847)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
No. 7	2,453	179.2	252.442	431.642	7.3	10.3	17.6	2,021.358	4
No. 10	1,522	54.6	....	191.828	3.6	....	12.6	1,330.172	4
	(3,001)	....	(272.193)	....	....	(9.1)	....	....	
Total	3,975	233.8	....	623.470	5.9	....	15.7	3,351.530	8
	(5,454)	....	(524.635)	....	....	(9.6)	....	....	....
Average	662	39.0	....	103.945	....	....	....	558.055	....
	(682)	....	(65.579)	....	....	....	....	....	....
Second subperiod:									
No. 7	2,466	111.5	266.282	377.782	4.5	10.8	15.3	2,088,218	8
No. 10	2,891	172.3	293.438	465.738	6.0	10.2	16.1	2,425.262	8
Total	5,357	283.8	559.720	843.520	5.3	10.4	15.7	4,513.480	16
Average	670	35.5	69.965	105.465	....	....	....	564.535	....
Subperiods 1 and 2:									
Total	9,332	517.6	....	1,466.990	5.5	....	15.7	7,865.010	24
	(10,811)	....	(1,084.355)	....	....	(10.0)	....	....	....
Average	667	37.0	....	104.814	....	....	....	562.186	....
	(676)	....	(67.772)	....	....	....	....	....	....
Third subperiod:									
No. 7	2,470	137.6	245.803	383.403	5.6	10.0	15.5	2,086.597	12
No. 10	2,901	109.0	291.174	400.174	3.8	10.0	13.8	2,500.826	12
Total	5,371	246.6	536.977	783.577	4.6	10.0	14.6	4,587.423	24
Average	671	30.8	67.122	97.922	....	....	....	573.078	....
Subperiods 1, 2, and 3:									
Total	14,703	764.2	....	2,250.567	5.2	....	15.3	12,452.433	48
	(16,182)	....	(1,621.332)	....	....	(10.0)	....	....	....
Average	668	34.7	....	102.262	....	....	....	565,738	....
	(674)	....	(67.556)	....	....	....	....	....	....

TABLE LXXXVIII.—*Summary of solids balances for Series II*—Continued.

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 7	4,249	213.5		710.981	5.0		16.7	3,538.019	
	(5,494)		(622.363)			(11.3)			
No. 10	5,169	232.3		680.360	4.5		13.2	4,488.640	
	(6,580)		(580.880)			(8.8)			
No. 12	5,160	188.7		594.814	3.7		11.5	4,565.186	
	(6,571)		(527.234)			(8.0)			
Total	14,578	634.5		1,986.155	4.4		13.6	12,591.845	
	(18,645)		(1,730.477)			(9.3)			
Average	694	30.2		94.565				599.435	
	(691)		(64.092)						
Preservative period.									
First subperiod:									
No. 7	2,453	179.2	252.442	431.642	7.3	10.3	17.6	2,021.358	4
No. 10	1,522	54.6		191.828	3.6		12.6	1,330.172	4
	(3,001)		(272.193)			(9.1)			
No. 12	2,833	124.2	268.040	392.240	4.4	9.5	13.8	2,440.760	4
Total	6,808	358.0		1,015.710	5.3		14.9	5,792.290	12
	(8,287)		(792.675)			(9.6)			
Average	681	35.8		101.571				579.429	
	(691)		(66.056)						
Second subperiod:									
No. 7	2,466	111.5	266.282	377.782	4.5	10.8	15.3	2,088.218	8
No. 10	2,891	172.3	293.438	465.738	6.0	10.2	16.1	2,425.262	8
No. 12	2,408	89.8	279.904	369.704	3.7	11.6	15.4	2,038.296	8
Total	7,765	373.6	839.624	1,213.224	4.8	10.8	15.6	6,551.776	24
Average	647	31.1	69.969	101.069				545.931	
Subperiods 1 and 2:									
Total	14,573	731.6		2,228.934	5.0		15.3	12,344.066	36
	(16,052)		(1,632.299)			(10.2)			
Average	662	33.3		101.361				560.639	
	(669)		(68.012)						
Third subperiod:									
No. 7	2,470	137.6	245.803	383.403	5.6	10.0	15.5	2,086.597	12
No. 10	2,901	109.0	291.174	400.174	3.8	10.0	13.8	2,500.826	12
No. 12	1,379	84.4	215.501	299.901	6.1	15.6	21.7	1,079.099	3
Total	6,750	331.0	752.478	1,083.478	4.9	11.1	16.1	5,666.522	27
Average	562	27.6	62.706	90.306				471.694	
Subperiods 1, 2, and 3:									
Total	21,323	1,062.6		3,312.412	5.0		15.5	18,010.588	63
	(22,802)		(2,384.777)			(10.5)			
Average	627	31.3		97.471				529,529	
	(633)		(66.244)						

TABLE LXXXIX.—*Solids balances for Series III.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	654	42.2	70.766	112.966	6.5	10.8	17.3	541.034	......
20	688	33.3	64.482	97.782	4.8	9.4	14.2	590.218	......
21	583	21.1	63.284	84.384	3.6	10.9	14.5	498.616	......
22	688	30.5	71.795	102.295	4.4	10.5	14.9	585.705	......
23	629	25.5	61.015	86.515	4.1	9.7	13.8	542.185	......
24	610	27.7	67.738	95.438	4.5	11.1	15.6	514.562	......
25	649	17.5	60.873	78.373	2.7	9.4	12.1	570.627	......
26	592	32.0	63.210	95.210	5.4	10.7	16.1	496.790	......
27	643	52.5	62.955	115.455	8.2	9.8	18.0	527.545	......
Total	5,736	282.3	586.118	868.418	4.9	10.2	15.1	4,867.582	......
Average	637	31.4	65.124	96.491	......	......	......	540.509	......
Preservative period.									
First subperiod:									
1903—Feb. 28	656	13.4	66.493	79.893	2.1	10.1	12.2	576.107	1
Mar. 1	676	56.0	67.478	123.488	8.3	10.0	18.3	552.512	1
2	591	34.3	62.240	96.540	5.8	10.5	16.3	494.460	1
3	618	29.5	62.578	92.078	4.8	10.1	14.9	525.922	1
Total	2,541	133.2	258.789	391.989	5.2	10.2	15.4	2,149.011	4
Average	635	33.3	64.697	97.997	......	......	......	537.003	......
Second subperiod:									
1903—Mar. 4	686	23.2	67.265	90.465	3.4	9.8	13.2	595.535	4
5	579	36.7	61.622	98.322	6.3	10.7	17.0	480.678	4
6	692	33.0	58.437	91.437	4.8	8.4	13.2	600.563	2
7	660	18.8	62.798	81.598	2.9	9.5	12.4	578.402	2
Total	2,617	111.7	250.122	361.822	4.3	9.5	13.8	2,255.178	12
Average	654	27.9	62.530	90.455	......	......	......	563.545	......
Third subperiod:									
1903—Mar. 8	557	26.8	65.003	91.803	4.8	11.7	16.5	465.197	3
9	678	24.0	58.937	82.937	3.5	8.7	12.2	595.063	2
10	691	37.0	62.475	99.475	5.4	9.0	14.4	591.525	3
11	538	9.5	62.847	72.347	1.8	11.6	13.4	465.653	2
Total	2,464	97.3	219.262	346.562	4.0	10.1	14.1	2,117.438	10
Average	616	24.3	62.316	86.641	......	......	......	529.359	......
Entire preservative period:									
Total	7,622	342.2	758.373	1,100.373	4.5	9.9	14.4	6,521.627	26
Average	635	28.5	63.198	91.698	......	......	......	543.302	......
After period.									
1903—Mar. 12	438	25.0	56.056	81.056	5.7	12.8	18.5	356.944	......
13	656	27.9	54.617	82.517	4.3	8.3	12.6	573.483	......
14	694	35.0	67.738	102.738	5.0	9.8	14.8	591.262	......
15	586	25.3	60.422	85.722	4.3	10.3	14.6	500.278	......
16	667	19.1	57.585	76.985	2.9	8.6	11.5	590.015	......
17	666	32.2	59.991	92.191	4.8	9.0	13.8	573.809	......
18	698	36.9	57.917	94.847	5.3	8.3	13.6	603.153	......
19	784	26.0	52.685	78.685	3.3	6.7	10.0	705.315	......
Total	5,189	227.7	467.041	694.741	4.4	9.0	13.4	4,491.259	......
Average	649	28.5	58.380	86.843	......	......	......	562.157	......

TABLE LXXXIX.—*Solids balances for Series III*—Continued.

No. 2.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	678	34.7	58.322	93.022	5.1	8.6	13.7	584.978	......
20	753	28.4	57.727	86.127	3.8	7.7	11.4	666.873	......
21	659	20.4	59.417	79.817	3.1	9.0	12.1	579.183	......
22	798	32.5	68.134	100.634	4.1	8.5	12.6	697.366	......
23	731	25.7	61.260	86.960	3.5	8.4	11.9	644.040	......
24	695	14.3	64.606	78.906	2.1	9.3	11.4	616.094	......
25	711	24.9	53.508	78.408	3.5	7.5	11.0	632.592	......
26	596	33.7	58.212	91.912	5.7	9.8	15.4	504.088	......
27	743	30.5	60.294	90.795	4.1	8.1	12.2	652.205	......
Total	6,364	245.1	541.480	786.580	3.8	8.5	12.3	5,577.420	......
Average	707	27.2	60.164	87.398	......	......	......	619.602	......
Preservative period.									
First subperiod:									
1903—Feb. 28	730	33.3	62.681	95.981	4.6	8.6	13.1	634.019	1
Mar. 1	696	27.8	63.112	90.912	4.0	9.1	13.1	605.088	1
2	713	26.2	61.733	87.933	3.7	8.7	12.3	625.067	1
3	704	23.5	58.785	82.285	3.3	8.3	11.7	621.715	1
Total	2,843	110.8	246.311	357.111	3.9	8.7	12.6	2,485.889	4
Average	711	27.7	61.578	89.278	......	......	......	621.722	......
Second subperiod:									
1903—Mar. 4	720	24.0	64.254	88.254	3.3	8.9	12.2	631.746	4
5	411	9.4	53.121	62.521	2.3	12.9	15.2	348.479	2
6	448	(*a*)	47.702	47.702	......	10.6	10.6	400.298	0
7	454	(*a*)	53.626	53.625	......	11.8	11.8	400.375	1
Total	2,033	33.4	218.703	252.102	1.6	10.8	12.4	1,780.897	7
Average	508	8.4	54.676	63.026	......	......	......	444.974	......
Third subperiod:									
1903—Mar. 8	285	29.5	52.274	81.774	10.4	18.3	28.7	203.226	0
9	401	29.8	42.493	72.293	7.4	10.6	18.0	328.707	0
10	529	16.5	42.336	58.836	3.1	8.0	11.1	470.164	0
11	723	19.5	42.711	62.211	2.7	5.9	8.6	660.789	0
Total	1,938	95.3	179.814	275.114	4.9	9.3	14.2	1,662.886	0
Average	484	23.8	44.954	68.778	......	......	......	415.222	......
Entire preservative period:									
Total	6,814	239.5	644.828	884.328	3.5	9.5	13.0	5,929.672	11
Average	568	20.0	53.736	73.694	......	......	......	494.306	......
After period.									
1903—Mar. 12	716	34.1	48.069	82.169	4.8	6.7	11.5	633.831	......
13	641	25.2	52.178	77.378	3.9	8.1	12.1	563.622	......
14	773	32.2	70.597	102.797	4.2	9.1	13.3	670.203	......
15	698	23.8	51.376	75.176	3.4	7.4	10.8	624.824	......
16	808	35.5	58.643	94.143	4.4	7.3	11.6	713.857	......
17	788	34.1	57.330	91.430	4.3	7.3	11.6	696.570	......
18	766	29.7	53.920	83.620	3.9	7.0	10.9	682.380	......
19	756	14.2	52.234	66.434	1.9	6.9	8.8	689.566	......
Total	5,946	228.8	444.347	673.147	3.8	7.4	11.3	5,272.853	......
Average	743	28.6	55.543	84.143	......	......	......	658.857	......

a No movement.

TABLE LXXXIX.—*Solids balances for Series III*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	658	34.1	51.156	85.256	5.2	7.8	13.0	572.744	....
20	630	13.0	55.167	68.167	2.1	8.8	10.8	561.833	....
21	[644]	[21.6]	....	....	[3.4]	....	....	....	....
22	729	25.5	63.700	89.200	3.5	8.7	12.2	639.800	....
23	713	36.0	70.486	106.486	5.0	9.9	14.9	606.514	....
24	655	11.1	53.662	64.762	1.7	8.2	9.7	590.238	....
25	702	21.7	52.170	73.870	3.1	7.4	10.5	628.120	....
26	651	26.9	54.782	81.682	4.1	8.4	12.5	569.318	....
27	858	18.5	51.670	70.170	2.2	6.0	8.2	787.830	....
Total	5,596	....	452.793	639.593	....	8.1	11.4	4,956.407	....
	[6,240]	[208.4]	....	....	[3.3]	....	....	....	....
Average	700	....	56.738	79.949	....	....	....	619.551	....
	[693]	[23.2]	....	....	....	....	....	....	....
Preservative period.									
First subperiod:									
1903—Feb. 28	680	15.5	47.804	63.304	2.3	7.0	9.3	616.696	1
Mar. 1	667	21.7	63.965	85.665	3.3	9.6	12.8	581.335	1
2	658	18.5	51.744	70.244	2.8	7.9	10.7	587.756	1
3	671	20.3	56.183	76.483	3.0	8.4	11.4	594.517	1
Total	2,676	76.0	219.696	295.696	2.8	8.2	11.1	2,380.304	4
Average	669	19.0	54.924	73.924	....	....	....	595.076	....
Second subperiod:									
1903—Mar. 4	693	27.7	56.093	83.793	4.0	8.1	12.1	609.207	4
5	659	7.4	56.228	63.628	1.1	8.5	9.7	595.372	4
6	631	30.0	59.991	89.991	4.8	9.5	14.3	541.009	2
7	603	20.2	53.096	73.296	3.3	8.8	12.2	529.704	2
Total	2,586	85.3	225.408	310.708	3.3	8.7	12.0	2,275.292	12
Average	646	21.3	56.352	77.677	....	....	....	568.323	....
Third subperiod:									
1903—Mar. 8	587	11.5	53.253	64.753	2.0	9.1	11.0	522.247	3
9	520	35.5	52.886	88.386	6.8	10.2	17.0	431.614	3
10	552	14.7	47.863	62.563	2.7	8.7	11.3	489.437	2
11	506	9.1	42.483	51.583	1.8	8.4	10.2	454.417	3
Total	2,165	70.8	196.485	267.285	3.3	9.1	12.3	1,897.715	11
Average	541	17.7	49.121	66.821	....	....	....	474.179	....
Entire preservative period:									
Total	7,427	232.1	641.589	873.689	3.1	8.6	11.8	6,353.311	27
Average	619	19.3	53.466	72.807	....	....	....	546.193	....
After period.									
1903—Mar. 12	494	29.1	38.651	67.751	5.9	7.8	13.7	426.249	....
13	612	13.2	49.541	62.741	2.2	8.1	10.3	549.259	....
14	533	27.0	48.184	75.184	5.1	9.0	14.1	457.816	....
15	515	11.7	43.806	55.506	2.1	8.0	10.2	489.494	....
16	612	15.1	43.316	58.116	2.5	7.1	9.5	553.584	....
17	(612)	Lost.	(41.057)	....	....	(6.7)	....	....	....
18	563	25.7	46.393	72.093	4.6	8.2	12.8	490.907	....
19	575	28.0	45.962	73.962	4.9	8.0	12.9	501.038	....
Total	3,934	149.8	....	465.653	3.8	....	11.9	3,468.347	....
	(4,546)	....	(356.910)	....	....	(7.9)	....	....	....
Average	562	21.4	....	66.522	....	....	....	495.478	....
	(568)	....	(44.612)	....	....	....	....	....	....

TABLE LXXXIX.—*Solids balances for Series III*—Continued

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	......	......	......	......	......	......	......	......	......
20	622.5	24.5	59.466	83.966	3.9	9.6	13.5	538.534	......
21	580.0	13.1	53.655	66.755	2.3	9.2	11.5	513.245	......
22	(598.0)	(a)	(58.785)	......	......	9.8	......	......	......
23	683.0	13.5	66.216	79.716	2.0	9.7	11.7	603.284	......
24	620.0	26.4	55.074	81.474	4.2	8.9	13.1	538.526	......
25	722.0	27.6	58.653	86.253	3.8	8.1	11.9	635.747	......
26	609.0	30.6	72.776	103.376	5.0	11.9	17.0−	505.624	......
27	646.0	20.5	59.285	79.785	3.2	9.2	12.4	566.215	......
Total	4,482.5	156.2	......	581.325	3.5	......	13.0−	3,901.175	......
	(5,080.5)	......	(483.850)	......	......	(9.5)	......	......	......
Average	640.4	22.3	......	83.046	......	......	......	557.354	......
	(635.1)	......	(60.481)	......	......	......	......	......	......
Preservative period.									
First subperiod:									
1903—Feb. 28	588.0	24.9	66.028	90.928	4.2	11.2	15.5−	497.072	1.0
Mar. 1	659.0	45.0	58.241	103.241	6.8	8.8	15.7−	555.759	1.0
2	628.0	21.8	73.642	95.442	3.5	11.7	15.2	532.558	1.0
3	658.0	34.3	71.854	106.154	5.2	10.9	16.1	551.846	1.0
Total	2,533.0	126.0	269.765	395.765	5.0	10.6	15.6	2,137.235	4.0
Average	633.0	31.5	67.441	98.940	......	......	......	534.060	......
Second subperiod:									
1903—Mar. 4	635.0	22.5	70.246	92.746	3.5	11.1	14.6	542.254	4.0
5	608.0	29.3	67.681	96.981	4.8	11.1	15.9	511.019	4.0
6	533.0	16.0	68.806	84.806	3.0	12.9	15.9	448.194	2.0
7	473.5	24.6	60.196	84.796	5.2	12.7	17.9	388.704	2.0
Total	2,249.5	92.4	266.929	359.329	4.1	11.9	16.0	1,890.171	12.0
Average	562.4	23.1	66.732	89.832	......	......	......	472.568	......
Third subperiod:									
1903—Mar. 8	514.0	21.0	47.574	68.574	4.1	9.2	13.3	445.426	3.0
9	416.0	16.0	50.803	66.803	3.8	12.2	16.1−	349.197	1.7
10	543.0	26.6	52.920	79.520	4.9	9.7	14.6	463.480	3.0
11	272.0	24.6	43.524	68.124	9.0	16.0	25.0	203.876	2.0
Total	1,745.0	88.2	194.821	283.021	5.1	11.2	16.2	1,461.979	9.7
Average	436.0	22.0	48.705	70.755	......	......	......	365.245	......
Entire preservative period:									
Total	6,527.5	306.6	731.515	1,038.115	4.7	11.2	15.9	5,489.385	25.7
Average	543.9	25.6	60.960	86.510	......	......	......	457.390	......
After period.									
1903—Mar. 12	437.0	(b)	39.038	39.038	......	8.9	......	397.962	......
13	473.0	30.0	42.380	72.380	6.3	9.0	15.3	400.620	......
14	563.5	(b)	40.131	40.131	......	7.1	7.1	523.369	......
15	442.5	29.9	39.984	69.884	6.7	9.0	15.8	372.616	......
16	[520.0]	[23.7]	......	......	[4.6]	......	......	......	......
17	538.0	17.0	47.334	64.334	3.2	8.8	12.0	473.666	......
18	515.0	20.9	52.452	73.352	4.1	10.2	14.2	451.648	......
19	(592.0)	(a)	(54.018)	......	......	(9.1)	......	......	......
Total	2,969.0	......	......	365.119	......	......	12.3	2,603.881	......
	(3,561.0)	......	(315.337)	......	......	(8.9)	......	......	......
	[3,489.0]	[121.5]	......	......	[3.5]	......	......	......	......
Average	494.8	......	......	60.853	......	......	......	433.947	......
	(508.7)	......	(45.048)	......	......	......	......	......	......
	[498.4]	[17.4]	......	......	......	......	......	......	......

a Discarded. b No movement.

TABLE LXXXIX.—*Solids balances for Series III*—Continued.

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	679	17.3	73.402	90.702	2.5	10.8	13.4	588.298	......
20	762	9.0	82.134	91.134	1.2	10.8	12.0	670.866	......
21	747	14.5	76.134	90.634	1.9	10.2	12.1	656.366	......
22	1,125	66.1	80.042	146.142	6.0	7.1	13.0	978.858	......
23	693	36.0	78.045	114.045	5.2	11.3	16.5	578.955	......
24	744	14.2	76.354	90.554	1.9	10.3	12.2	653.446	......
25	805	24.2	78.326	162.526	3.0	9.7	12.7	702.474	......
26	661	52.8	89.545	142.345	8.0	13.5	21.5	518.655	......
27	764	9.0	85.358	94.358	1.2	11.2	12.4	669.642	......
Total	6,980	243.1	719.340	962.440	3.5	10.3	13.8	6,017.560	......
Average	776	27.0	79.927	106.938	......	......	......	669.062	......
Preservative period.									
First subperiod:									
1903—Feb. 28	769	45.5	76.440	121.940	5.9	9.9	15.9	647.060	1.0
Mar. 1	825	3.5	78.312	81.812	.4	9.5	9.9	743.188	1.0
2	817	33.0	76.009	109.009	4.0	9.3	13.3	707.991	1.0
3	739	51.1	77.518	128.618	6.9	10.5	17.4	610.382	1.0
Total	3,150	133.1	308.279	441.379	4.2	9.8	14.0	2,708.621	4.0
Average	788	33.0	77.070	110.345	......	......	......	677.655	......
Second subperiod:									
1903—Mar. 4	801	30.0	81.722	111.722	3.7	10.2	13.9	689.278	4.0
5	784	20.8	80.659	101.459	2.7	10.3	12.9	682.541	4.0
6	799	47.5	73.843	121.343	5.9	9.2	15.2	677.657	2.0
7	665	27.3	75.455	102.755	4.1	11.3	15.5	562.245	2.0
Total	3,049	125.6	311.679	437.279	4.1	10.2	14.3	2,611.721	12.0
Average	762	31.4	77.920	109.320	......	......	......	652.680	......
Third subperiod:									
1903—Mar. 8	694	23.7	71.618	95.318	3.4	10.3	13.7	598.682	3.0
9	639	6.2	81.364	87.564	1.0	12.7	13.7	551.436	3.0
10	519	13.9	68.544	82.444	2.7	13.2	15.9	436.556	2.2
11	448	5.5	50.774	56.274	1.2	11.3	12.6	391.726	3.0
Total	2,300	49.3	272.300	321.600	2.1	11.8	14.0	1,978.400	11.2
Average	575	12.3	68.075	80.400	......	......	......	494.600	......
Entire preservative period:									
Total	8,499	308.0	892.258	1,200.258	3.6	10.5	14.1	7,298.742	27.2
Average	708	25.7	74.355	100.022	......	......	......	607.978	......
After period.									
1903—Mar. 12	477.6	46.2	57.411	103.611	9.7	12.0	21.7	373.989	......
13	658	28.5	64.878	93.378	4.3	9.9	14.2	564.622	......
14	802	38.0	84.760	122.760	4.7	10.9	15.3	679.240	......
15	774	(a)	71.736	71.736	......	10.6	9.3	702.264	......
16	799	25.5	67.782	93.282	3.2	8.5	11.7	705.718	......
17	803	40.4	72.936	113.336	5.0	9.1	14.1	689.664	......
18	799	7.7	74.242	81.942	9.8	9.3	10.3	717.058	......
19	814	28.7	69.580	98.280	13.5	8.5	12.1	715.720	......
Total	5,926.6	215.0	563.325	778.325	3.6	9.5	13.3	5,148.275	......
Average	740.8	26.9	70.416	97.291	......	......	......	643.509	......

a No movement.

TABLE LXXXIX.—*Solids balances for Series III*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Feb. 19	550	(a)	37.309	37.309	....	6.8	6.8	512.691	......
20	575.5	11.5	50.615	62.115	2.0	8.8	10.8	513.385	......
21	579	63.5	48.951	112.451	11.0	8.5	19.4	466.549	......
22	570	28.5	47.662	76.162	5.0	8.4	13.4	493.838	......
23	653	(a)	52.881	52.881	....	8.1	8.1	600.119	......
24	660	19.1	54.743	73.843	2.9	8.3	11.2	586.157	......
25	641	23.0	56.252	79.252	3.6	8.8	12.4	561.748	......
26	611	29.7	53.302	83.002	4.9	8.7	13.6	527.998	......
27	619	(a)	55.860	55.860	....	9.0	9.0	563.140	......
Total	5,458.5	175.3	457.575	632.875	3.2	8.4	11.6	4,825.625	......
Average	606.5	19.5	50.842	70.319	....	....	....	536.181	......
Preservative period.									
First subperiod:									
1903—Feb. 28	416	40.5	55.801	96.301	9.7	13.4	23.1	319.699	1
Mar. 1	401.5	45.8	45.942	91.742	11.4	11.4	22.9	309.758	0
2	491	34.2	38.124	72.324	7.0	7.8	14.7	418.676	0
3	628	17.1	51.411	68.511	2.7	8.2	10.9	559.489	0
Total	1,936.5	137.6	191.278	328.878	7.1	9.9	17.0	1,607.622	1
Average	484 1	34.4	47.820	82.220	....	....	....	401.880	......
Second subperiod:									
1903—Mar. 4	557	30.6	53.288	83.888	5.5	9.6	15.1	473.112	0
5	567	50.5	51.097	101.597	8.9	9.0	17.9	465.403	0
6	585	41.3	43.218	84.518	7.1	7.4	14.5	500.482	1
7	652	38.9	59.898	98.798	6.0	9.2	15.2	553.202	2
Total	2,361	161.3	207.501	368.801	6.8	8.8	15.6	1,992.199	3
Average	590	40.3	51.875	92.200	....	....	....	497.800	......
Third subperiod:									
1903—Mar. 8	615	39.0	42.838	81.838	6.3	7.0	13.3	533.162	3
9	582	28.6	54.091	82.691	4.9	9.3	14.2	499.309	3
10	592	(a)	55.728	53.728	....	9.1	9.1	538.272	3
11	551	32.5	50.372	82.872	5.9	9.1	15.0	468.128	3
Total	2,340	100.1	201.029	301.129	4.3	8.6	12.9	2,038.871	12
Average	585	25.0	50.257	75.282	....	....	....	509.718	......
Entire preservative period:									
Total	6,637.5	399.0	599.808	998.808	6.0	9.0	15.0	5,638.692	16
Average	553.1	33.2	49.988	83.234	....	....	....	469.866	......
After period.									
1903—Mar. 12	595	36.0	55.811	91.811	6.1	9.4	15.4	503.189	......
13	583	32.0	50.220	82.220	5.5	8.6	14.1	500.780	......
14	659	13.2	52.528	65.728	2.0	8.0	10.0	593.272	......
15	638	27.4	55.248	82.648	4.3	8.7	13.0	555.352	......
16	849	29.6	42.022	71.622	3.5	4.9	8.4	777.378	......
17	790	31.2	47.836	79.036	3.9	6.1	10.0	710.964	......
18	589	52.0	48.686	100.686	8.8	8.3	17.1	488.314	......
19	(618)	Lost.	(53.577)	....	....	(8.7)	....	....	......
Total	4,703	221.4	....	573.751	4.7	....	12.2	4,129.249	......
	(5,321)	....	(405.928)	....	....	(7.6)	....	....	......
Average	672	31.6	....	81.964	....	....	....	590.036	......
	(665)	....	(50.741)	....	....	....	....	....	......

a No movement.

TABLE XC.—*Summary of solids balances for Series III.*

Four men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	5,736	282.3	586.1	868.4	4.9	10.2	15.1	4,867.6	
No. 3	5,596		452.8	639.6		8.1	11.4	4,956.4	
	[6,240]	[208.4]			[3.3]				
No. 4	4,482.5	156.2		581.3	3.5		13.0	3,901.2	
	(5,080.5)		(483.9)			(9.5)			
No. 5	6,980	243.1	719.3	962.4	3.5	10.3	13.8	6,017.6	
Total	22,794.5			3,051.7			13.4	19,742.8	
	(23,392.5)		(2,667.2)			(11.4)			
	[23,438.5]	[890.0]			[3.8]				
Average	691			92.5				598.5	
	(688)		(78.4)						
	[689]	[26.2]							
Preservative period.									
First subperiod:									
No. 1	2,541	133.2	258.8	392.0	5.2	10.2	15.4	2,149.0	4.0
No. 3	2,676	76.0	219.7	295.7	2.8	8.2	11.1	2,380.3	4.0
No. 4	2,533	126.0	269.8	395.8	5.0	10.6	15.6	2,137.2	4.0
No. 5	3,150	133.1	308.3	441.4	4.2	9.8	14.0	2,708.6	4.0
Total	10,900	468.3	1,056.6	1,524.9	4.3	9.7	14.0	9,375.1	16.0
Average	681	29.3	66.0	95.3				585.7	
Second subperiod:									
No. 1	2,617	111.7	250.1	361.8	4.3	9.5	13.8	2,255.2	12.0
No. 3	2,586	85.3	225.4	310.7	3.3	8.7	12.0	2,275.3	12.0
No. 4	2,249.5	92.4	266.9	359.3	4.1	11.9	16.0	1,890.2	12.0
No. 5	3,049	125.6	311.7	437.3	4.1	10.2	14.3	2,611.7	12.0
Total	10,501.5	415.0	1,054.1	1,469.1	4.0	10.0	14.0	9,032.4	48.0
Average	656	25.9	65.9	91.8				564.2	
Third subperiod:									
No. 1	2,464	97.3	249.3	346.6	4.0	10.1	14.1	2,117.4	10.0
No. 3	2,165	70.8	196.5	267.3	3.3	9.1	12.3	1,897.7	11.0
No. 4	1,745	88.2	194.8	283.0	5.1	11.2	16.2	1,462.0	9.7
No. 5	2,300	49.3	272.3	321.6	2.1	11.8	14.0	1,978.4	11.2
Total	8,671	305.6	912.9	1,218.5	3.5	10.5	14.0	7,455.5	41.9
Average	542	19.1	57.1	76.2				465.8	
Entire preservative period:									
Total	30,075.5	1,188.9	3,023.6	4,212.5	4.0	10.1	14.0	25,863.0	105.9
Average	627	24.8	63.0	87.8				539.2	
After period.									
No. 1	5,189	227.7	467.0	694.7	4.4	9.0	13.4	4,494.3	
No. 3	3,934	149.8		465.7	3.8		11.9	3,468.3	
	(4,546)		(356.9)			(7.9)			
No. 4	2,969			365.1			12.3	2,603.9	
	(3,561)		(315.3)			(8.9)			
	[3,189]	[121.5]			[3.5]				
No. 5	5,926.6	215.0	563.3	778.3	3.6	9.5	13.3	5,148.3	
Total	18,018.6			2,303.8			12.8	15,714.8	
	(19,222.6)		(1,702.5)			(8.9)			
	[18,538.6]	[714.0]			[3.9]				
Average	621			79.4				541.6	
	(620)		(51.9)						
	[618]	[23.8]							

TABLE XC.—*Summary of solids balances for Series III*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	5,736	282.3	586.1	868.4	4.9	10.2	15.1	4,867.6	......
No. 2	6,364	245.1	541.5	786.6	3.8	8.5	12.3	5,577.4	......
No. 3	5,596	......	452.8	639.6	......	8.3	11.6	4,956.4	......
	[6,240]	[208.4]	......	......	[3.3]	......	......	......	
No. 4	4,482.5	156.2	......	581.3	3.5	......	13.0	3,901.2	......
	(5,080.5)	......	(483.9)	......	......	(9.5)	......	......	
No. 5	6,980	243.1	719.3	962.4	3.5	10.3	13.8	6,017.6	......
Total	29,158.5	......	......	3,848.3	......	......	13.2	25,310.2	......
	(29,756.5)	......	(2,783.6)	......	......	(9.4)	......	......	
	[29,802.5]	[1,135.1]	......	......	[3.8]	......	......	......	
Average	694.2	......	......	91.6	......	......	......	602.6	......
	(692.0)	......	(64.7)	......	......	......	......	......	
	[693.1]	[26.4]	......	......	......	......	......	......	
Preservative period.									
First subperiod:									
No. 1	2,541	133.2	258.8	392.0	5.2	10.2	15.4	2,149.0	4
No. 2	2,843	110.8	246.3	357.1	3.9	8.7	12.6	2,485.9	4
No. 3	2,676	76.0	219.7	295.7	2.8	8.2	11.1	2,380.3	4
No. 4	2,533	126.0	269.8	395.8	5.0	10.6	15.6	2,137.2	4
No. 5	3,150	133.1	308.3	441.4	4.2	9.8	14.0	2,708.6	4
Total	13,743	579.1	1,302.9	1,882.0	4.2	9.5	13.7	11,861.0	20
Average	687	29.0	65.1	94.1	......	......	......	592.9	......

TABLE XCI.—*Solids balances for Series IV.*

No. 7.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	394	27.8	29.845	57.645	7.1	7.6	14.6	336.355	......
21	478	37.8	52.742	90.542	7.9	11.0	18.9	387.458	......
22	470	30.0	45.924	75.924	6.4	9.8	16.2	394.076	......
23	535	24.2	57.944	82.144	4.5	10.8	15.4	452.856	......
24	473	28.8	40.378	69.178	6.1	8.5	14.6	403.822	......
25	497	19.4	47.485	66.885	3.9	9.6	13.5	430.115	......
26	504	50.7	53.124	103.824	10.1	10.5	20.6	400.176	......
27	501	16.5	45.474	61.974	3.3	9.1	12.4	439.026	......
Total	3,852	235.2	372.916	608.116	6.1	9.7	15.8	3,243.884	......
Average	482	29.4	46.615	76.015	......	......	......	405.985	......
Preservative period.									
First subperiod:									
1903—Mar. 28	483	34.5	60.774	95.274	7.1	12.6	19.7	387.726	0.5
29	488	53.0	46.900	99.900	10.9	9.6	20.5	388.100	.5
30	509	40.0	57.235	97.235	7.9	11.2	19.1	411.765	.5
31	492	28.6	49.104	77.704	5.8	10.0	15.8	414.296	.5
Total	1,972	156.1	214.013	370.113	7.9	10.9	18.8	1,601.887	2.0
Average	493	39.0	53.503	92.528	......	......	......	400.472	......

TABLE XCI.—*Solids balances for Series IV*—Continued.

No. 8.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	727	7.0	61.320	68.320	1.0	8.4	9.4	658.680	....
21	660	29.2	65.650	94.850	4.4	9.9	14.4	565.150	....
22	640	19.0	62.452	81.452	3.0	9.8	12.7	558.548	....
23	(638)	Lost.	(49.740)	....	....	(7.8)	....	....	....
24	576	(a)	49.590	49.590	....	8.6	8.6	526.410	....
25	739	46.7	67.640	114.340	6.3	9.2	15.5	624.660	....
26	692	40.4	60.130	100.530	5.8	8.7	14.5	591.470	....
27	669	(a)	60.050	60.050	....	9.0	9.0	608.950	....
Total	4,703	142.3	....	569.132	3.0	....	12.1	4,133.868	....
	(5,341)	....	(476.572)	....	....	(8.9)	....	....	....
Average	672	20.3	....	....	....	....	....	....	....
	(668)	....	(59.572)	81.305	....	....	....	590.695	....
Preservative period.									
First subperiod:									
1903—Mar. 28	658	25.5	48.500	74.000	3.9	7.4	11.3	584.000	0.5
29	657	49.5	60.208	109.708	7.5	9.2	16.7	547.292	.5
30	694	50.3	64.638	114.938	7.2	9.3	16.6	579.062	.5
31	649	33.0	57.510	90.510	5.1	8.9	13.9	558.490	.5
Total	2,658	158.3	230.856	389.156	6.0	8.7	14.6	2,268.844	2.0
Average	664	39.6	57.714	97.314	....	....	....	566.686	....
Second subperiod:									
1903—Apr. 1	692	(a)	62.820	62.820	....	9.1	9.1	629.180	1.0
2	605	50.0	49.925	99.925	8.3	8.3	16.5	505.075	1.0
3	644	21.3	60.128	81.428	3.3	9.3	12.6	562.572	1.0
4	593	45.3	61.090	106.390	7.6	10.3	17.9	486.610	1.0
Total	2,534	116.6	233.963	350.563	4.6	9.2	13.8	2,183.437	4.0
Average	634	29.2	58.491	87.641	....	....	....	546.359	....
Subperiods 1 and 2:									
Total	5,192	274.9	464.819	739.719	5.3	9.0	14.2	4,452.281	6.0
Average	649	34.4	58.103	92.465	....	....	....	556.535	....
Third subperiod:									
1903—Apr. 5	614	(a)	53.690	53.690	....	8.7	8.7	560.310	1.0
6	714	26.3	61.290	87.590	3.7	8.6	12.3	626.410	1.0
7	659	41.6	56.670	98.270	6.3	8.6	14.9	560.730	1.0
8	724	36.8	61.740	98.540	5.1	8.5	13.6	625.460	1.0
9	633	28.8	56.458	85.258	4.5	8.9	13.5	547.742	1.0
Total	3,344	133.5	289.848	423.348	4.0	8.7	12.7	2,920.652	5.0
Average	669	26.7	57.970	81.670	....	....	....	584.330	....
Subperiods 1, 2, and 3:									
Total	8,536	408.4	754.667	1,163.067	4.8	8.8	13.6	7,372.933	11.0
Average	657	31.4	58.051	89.467	....	....	....	567.533	....
Fourth subperiod:									
1903—Apr. 10	685	26.5	51.005	77.505	3.9	7.4	11.3	607.495	2.0
11	642	21.2	60.820	85.020	3.8	9.5	13.2	556.980	2.0
12	605	38.6	58.988	97.588	6.4	9.8	16.1	507.412	2.0
13	667	23.0	39.105	62.105	3.4	5.9	9.3	601.895	2.0
14	627	27.0	47.040	74.040	4.3	7.5	11.8	552.960	3.0
Total	3,226	139.3	256.958	396.258	4.3	8.0	12.3	2,829.742	11.0
Average	645	27.9	51.392	79.252	....	....	....	565.748	....
Entire preservative period:									
Total	11,762	547.7	1,011.625	1,559.325	4.7	8.6	13.3	10,202.675	22.0
Average	653	30.4	56.201	86.629	....	....	....	566.371	....
After period.									
1903—Apr. 15	659	21.8	53.198	74.998	3.3	8.1	11.4	584.002	....
16	632	27.0	45.520	72.520	4.3	7.2	11.5	559.480	....
17	683	31.7	48.775	80.475	4.6	7.1	11.8	602.525	....
18	577	19.6	48.180	67.780	3.4	8.4	11.7	509.220	....
19	557	37.2	56.692	93.892	6.7	10.2	16.9	463.108	....
20	515	36.6	53.215	89.815	7.1	10.3	17.4	425.155	....
21	560	(a)	59.385	59.385	....	10.6	10.6	500.615	....
22	604	49.6	50.338	99.938	8.2	8.3	16.5	504.062	....
Total	4,787	223.5	415.333	638.833	4.7	8.7	13.3	4,148.167	....
Average	598	27.9	51.917	79.854	....	....	....	518.146	....

a No movement.

TABLE XCI.—*Solids balances for Series IV*—Continued.

No. 9.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	534	38.8	63.357	102.157	7.3	11.9	19.1	431.843	......
21	636	20.5	63.600	84.100	3.2	10.0	13.2	551.900	......
22	600	39.0	61.945	100.945	6.5	10.3	16.8	499.055	......
23	629	33.0	58.662	91.662	5.2	9.3	14.6	537.338	......
24	541	26.5	62.170	88.670	4.9	11.5	16.4	452.330	......
25	639	27.4	62.920	90.320	4.3	9.8	14.1	548.680	......
26	591	31.7	55.500	87.200	5.4	9.4	14.8	503.800	......
27	641	16.7	61.120	77.820	2.6	9.5	12.1	563.180	......
Total	4,811	233.6	489.274	722.874	4.9	10.2	15.0	4,088.126	......
Average	601	29.2	61.159	90.359	......	......	......	510.641	......
Preservative period.									
First subperiod:									
1903—Mar. 28	569	31.0	62.970	93.970	5.4	11.1	16.5	475.030	0.5
29	596	34.5	61.090	95.590	5.8	10.3	16.0	500.410	.5
30	647	29.8	62.900	92.700	4.6	9.7	14.3	554.300	.5
31	599	29.1	63.528	92.628	4.9	10.6	15.5	506.372	.5
Total	2,411	124.4	250.488	374.888	5.2	10.4	15.5	2,036.112	2.0
Average	603	31.1	62.622	93.722	......	......	......	509.278	......
Second subperiod:									
1903—Apr. 1	607	30.5	57.780	88.280	5.0	9.5	14.5	518.720	1.0
2	547	(*a*)	62.215	62.215	......	11.4	11.4	484.785	1.0
3	626	51.1	66.150	117.250	8.2	10.6	18.7	508.750	1.0
4	647	(*a*)	69.559	69.559	......	10.8	10.8	577.441	1.0
Total	2,427	81.6	255.704	337.304	3.4	10.5	13.9	2,089.696	4.0
Average	607	20.4	63.926	84.326	......	......	......	522.674	......
Subperiods 1 and 2:									
Total	4,838	206.0	506.192	712.192	4.3	10.5	14.7	4,125.808	6.0
Average	605	25.8	63.274	89.074	......	......	......	515.926	......
Third subperiod:									
1903—Apr. 5	559	28.2	62.478	90.678	5.0	11.2	16.2	468.322	1.0
6	617	38.7	64.220	102.920	6.3	10.4	16.7	514.080	1.0
7	588	24.8	63.670	88.470	4.2	10.8	15.0	499.530	1.0
8	644	42.6	59.565	102.165	6.6	9.2	15.9	541.835	1.0
9	580	13.4	71.980	85.380	2.3	12.4	14.7	494.620	1.0
Total	2,988	147.7	321.913	469.613	4.9	10.8	15.7	2,518.387	5.0
Average	598	29.5	64.383	93.883	......	......	......	504.117	......
Subperiods 1, 2, and 3:									
Total	7,826	353.7	828.105	1,181.805	4.5	10.6	15.1	6,644.195	11.0
Average	602	27.2	63.700	90.900	......	......	......	511.100	......
Fourth subperiod:									
1903—Apr. 10	624	25.2	65.620	90.820	4.0	10.5	14.6	533.180	2.0
11	573	40.9	67.010	107.910	7.1	11.7	18.8	465.090	2.0
12	571	27.6	68.120	95.720	4.8	11.9	16.8	475.280	2.0
13	673	19.4	54.220	73.620	2.9	8.1	10.9	599.380	2.0
14	590	22.6	64.780	87.380	3.8	11.0	14.8	502.620	3.0
Total	3,031	135.7	319.750	455.450	4.5	10.5	15.0	2,575.550	11.0
Average	606	27.1	63.950	91.050	......	......	......	514.950	......
Entire preservative period:									
Total	10,857	489.4	1,147.855	1,637.255	4.5	10.6	15.1	9,219.745	22.0
Average	603	27.2	63.770	90.970	......	......	......	512.030	......
After period.									
1903—Apr. 15	623	19.9	59.750	79.650	3.2	9.6	12.8	543.350	......
16	619	30.6	63.390	93.990	4.9	10.2	15.2	525.010	......
17	596	35.0	61.388	96.388	5.9	10.3	16.2	499.612	......
18	609	34.2	57.580	91.780	5.6	9.5	15.1	517.220	......
19	598	29.0	56.759	85.759	4.8	9.5	14.3	512.241	......
20	633	30.2	65.340	95.540	4.8	10.3	15.1	537.460	......
21	543	9.4	61.160	70.560	1.7	11.3	13.0	472.440	......
22	596	18.5	60.427	78.927	3.1	10.1	13.2	517.073	......
Total	4,817	206.8	485.794	692.594	4.3	10.1	14.4	4,124.406	......
Average	602	25.8	60.724	86.524	......	......	......	515.476	......

a No movement.

TABLE XCI.—*Solids balances for Series IV*—Continued.

No. 10.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	656	23.5	67.350	90.850	3.6	10.3	13.8	565.150	....
21	669	26.0	65.360	91.360	3.9	9.8	13.7	577.640	....
22	581	18.0	69.630	87.630	3.1	12.0	15.1	493.370	....
23	550	19.5	59.284	78.784	3.5	10.8	14.3	471.216	....
24	616	26.5	56.780	83.280	4.3	9.2	13.5	532.720	....
25	669	30.7	64.930	95.630	4.6	9.7	14.3	573.370	....
26	686	29.7	57.880	87.580	4.3	8.4	12.8	598.420	....
27	693	31.0	59.210	90.210	4.5	8.5	13.0	602.790	....
Total	5,120	204.9	500.424	705.324	4.0	9.8	13.8	4,414.676	....
Average	640	25.6	62.553	88.153	....	....	....	551.847	....
Preservative period.									
First subperiod:									
1903—Mar. 28	677	42.0	66.050	108.050	6.2	9.8	16.0	568.950	0.5
29	685	42.4	58.700	101.100	6.2	8.6	14.8	583.900	.5
30	653	24.4	56.860	81.260	3.7	8.7	12.4	571.740	.5
31	677	50.4	58.602	109.002	7.4	8.7	16.1	567.998	.5
Total	2,692	159.2	240.212	399.412	5.9	8.9	14.8	2,292.588	2.0
Average	673	39.8	60.053	99.853	....	....	....	573.147	......
Second subperiod:									
1903—Apr. 1	689	23.7	58.545	82.245	3.4	8.5	11.9	606.755	1.0
2	663	41.5	44.432	85.932	6.3	6.7	13.0	577.068	1.0
3	685	28.4	72.921	101.321	4.1	10.6	14.8	583.679	1.0
4	686	21.7	57.888	79.588	3.2	8.4	11.6	606.412	1.0
Total	2,723	115.3	233.786	349.086	4.2	8.6	12.8	2,373.914	4.0
Average	681	28.8	58.446	87.246	....	....	....	593.754	....
Subperiods 1 and 2:									
Total	5,415	274.5	473.998	748.498	5.1	8.8	13.8	4,666.502	6.0
Average	677	34.3	59.250	93.550	....	....	....	583.450	....
Third subperiod:									
1903—Apr. 5	656	27.0	63.165	90.165	4.1	9.6	13.7	565.835	1.0
6	704	28.9	51.360	80.260	4.1	7.3	11.4	623.740	1.0
7	669	33.2	67.222	100.422	5.0	10.0	15.0	568.578	1.0
8	708	35.9	56.550	92.450	5.1	8.0	13.1	615.550	1.0
9	672	32.3	56.305	88.605	4.8	8.4	13.2	583.395	1.0
Total	3,409	157.3	294.602	451.902	4.6	8.6	13.2	2,957.098	5.0
Average	682	31.5	58.920	90.420	....	....	....	591.580	....
Subperiods 1, 2, and 3:									
Total	8,824	431.8	768.600	1,200.400	4.9	8.7	13.6	7,623.600	11.0
Average	679	33.2	59.123	92.323	....	....	....	586.677	....
Fourth subperiod:									
1903—Apr. 10	696	9.1	54.002	63.102	1.3	7.8	9.1	632.898	2.0
11	704	60.5	69.118	129.618	8.6	9.8	18.4	574.382	2.0
12	678	29.7	62.260	91.960	4.4	9.2	13.6	586.040	2.0
13	708	13.1	58.662	71.762	1.8	8.3	10.1	636.238	2.0
14	676	50.8	45.160	95.960	7.5	6.7	14.2	580.040	3.0
Total	3,462	163.2	289.202	452.402	4.7	8.4	13.1	3,009.598	11.0
Average	692	32.6	57.840	90.440	....	....	....	601.560	....
Entire preservative period:									
Total	12,286	595.0	1,057.802	1,652.802	4.8	8.6	13.4	10,633.198	22.0
Average	683	33.1	58.767	91.867	....	....	....	591.133	....
After period.									
1903—Apr. 15	25	(a)	30.180	30.180	....	120.7	120.7	5.180	....
16	(b)	....	....	....	....	....	....	....	....
17	270	13.0	60.540	73.540	4.8	22.4	27.1	196.460	....
18	410	(a)	49.390	49.390	....	12.0	12.0	360.610	....
19	479	(a)	56.710	56.710	....	11.8	11.8	422.290	....
20	598	39.6	46.640	86.240	6.6	7.8	14.4	511.760	....
21	573	33.3	70.240	103.540	5.8	12.3	18.1	469.460	....
22	632	48.3	45.280	93.580	7.6	7.2	14.8	538.420	....
Total	2,987	134.2	358.980	493.180	4.5	12.0	16.5	2,493.820	....
Average	427	19.2	51.283	70.483	....	....	....	356.517	....

a No movement.

b Discarded.

TABLE XCI.—*Solids balances for Series IV*—Continued.

No. 11.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	681	25.1	49.375	74.475	3.7	7.2	10.9	606.525	......
21	591	18.5	53.605	72.105	3.1	9.1	12.2	518.895	......
22	618	25.2	58.440	83.640	4.1	9.5	13.5	534.360	......
23	(589)	Lost.	(51.480)	....	....	(8.7)	....	....	......
24	555	11.0	54.050	65.050	2.0	9.7	11.7	489.950	......
25	597	36.5	60.198	96.698	6.2	10.0	16.2	500.302	......
26	598	15.0	49.810	64.810	2.5	8.3	10.8	533.190	......
27	618	24.5	59.858	84.358	4.0	9.7	13.7	533.642	......
Total	4,258	155.8	....	541.136	3.7	......	12.7	3,716.864	......
	(4,847)	....	(436.816)	....	....	(9.0)	....	....	......
Average	608	22.3	....	77.348	....	......	....	530.652	......
	(606)	....	(54.602)	....	....	......	....	....	......
Preservative period (excluded).									
First subperiod:									
1903—Mar. 28	577	28.0	55.938	83.938	4.9	9.7	14.5	493.062	0.5
29	610	22.9	58.650	81.550	3.8	9.6	13.4	528.450	.5
30	95	53.6	38.340	91.940	56.4	40.4	96.8	3.060	.0
Total	1,282	104.5	152.928	257.428	8.2	11.9	20.1	1,024.572	1.0
Average	427	34.8	50.976	85.809	....	......	....	341.191	......
Fore period.									
1903—Mar. 31	123	(*a*)	34.220	34.220	....	27.8	27.8	88.780	0.0
Apr. 1	315	20.8	26.995	47.795	6.6	8.6	15.2	267.205	0.0
2	509	11.1	38.700	49.800	2.2	7.6	9.8	459.200	0.0
3	573	21.5	41.708	63.208	3.8	7.3	11.0	509.792	0.0
Total	1,520	53.4	141.623	195.023	3.5	9.3	12.8	1,324.977	0.0
Average	380	13.4	35.406	48.806	....	......	....	331.194	......
Preservative period.									
1903—Apr. 4	582	41.5	54.900	96.400	7.1	9.4	16.6	485.600	0.5
5	583	27.2	57.158	84.358	4.7	9.8	14.5	498.642	1.0
6	568	25.9	45.680	71.580	4.6	8.0	12.6	496.420	1.0
7	602	41.0	53.345	94.345	6.8	8.9	15.7	507.655	1.0
8	617	23.2	47.200	70.400	3.8	7.6	11.4	546.600	1.0
9	513	30.6	47.230	77.830	6.0	9.2	15.2	435.170	1.0
10	606	18.2	53.780	71.980	3.0	8.9	11.9	534.020	1.0
11	551	28.1	54.880	82.980	5.1	10.0	15.1	468.020	1.0
12	577	32.2	52.900	85.100	5.6	9.2	14.8	491.900	2.0
13	591	32.9	58.763	91.663	5.6	9.9	15.5	499.337	2.0
14	578	19.7	53.202	72.902	3.4	9.2	12.6	505.098	3.0
Total	6,368	320.5	579.038	899.538	5.0	9.1	14.1	5,468.462	14.5
Average	579	29.1	52.640	81.776	....	......	....	497.224	......
After period.									
1903—Apr. 15	580	10.9	49.485	60.385	1.9	8.5	10.4	519.615	......
16	539	10.5	45.350	55.850	1.9	8.4	10.4	483.150	......
17	561	(*a*)	47.775	47.775	....	8.5	8.5	513.225	......
18	547	71.3	51.320	122.620	13.0	9.5	22.4	424.380	......
19	564	9.2	50.960	60.160	1.6	9.0	10.7	503.840	......
20	567	29.9	49.617	79.517	5.3	8.7	14.0	487.483	......
21	564	8.8	54.948	63.748	1.6	9.7	11.3	500.252	......
22	515	24.8	53.508	78.308	4.8	10.4	15.2	436.692	......
Total	4,437	165.4	402.963	568.363	3.7	9.1	12.8	3,868.637	......
Average	555	20.7	50.370	71.045	....	......	....	483.955	......

a No movement.

TABLE XCI.—*Solids balances for Series IV*—Continued.

No. 12.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period (excluded).									
	Grams.	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Mar. 20	530	31.0	58.963	89.963	5.8	11.1	17.0	440.037	....
21	588	50.0	70.160	120.160	8.5	11.9	20.4	467.840	....
22	622	13.0	59.930	72.930	2.1	9.6	11.7	549.070	....
23	584	43.5	68.150	111.650	7.4	11.7	19.1	472.350	....
24	523	34.9	60.540	95.440	6.7	11.6	18.2	427.560	....
25	649	36.9	57.980	94.880	5.7	8.9	14.6	554.120	....
26	623	28.5	66.190	94.690	4.6	10.6	15.2	528.310	....
27	647	38.5	60.625	99.125	6.0	9.4	15.3	547.875	....
Total	4,766	276.3	502.538	778.838	5.8	10.5	16.3	3,987.162	....
Average	596	34.5	62.817	97.317	....	....	....	498.683	....
Preservative period (excluded).									
First subperiod:									
1903—Mar. 28	593	20.2	58.958	79.158	3.4	9.9	13.3	513.842	0.5
29	611	30.7	61.630	92.330	5.0	10.1	15.1	518.670	.5
30	651	49.1	57.587	106.687	7.5	8.8	16.4	544.313	.5
31	(*a*)	....	....	....	....	....	....	....	.5
Total	1,855	100.0	178.175	278.175	5.4	9.6	15.0	1,576.825	2.0
Average	618	33.3	59.392	92.692	....	....	....	525.308	....
Fore period.									
1903—Apr. 3	374	22.5	46.735	69.235	6.0	12.5	18.5	304.765	0.0
4	629	20.1	59.180	79.280	3.2	9.4	12.6	549.720	0.0
5	628	28.7	66.679	95.379	4.6	10.6	15.2	532.621	0.0
Total	1,631	71.3	172.594	243.894	4.4	10.6	15.0	1,387.106	0.0
Average	544	23.8	57.531	81.298	....	....	....	462.702	....
Preservative period.									
1903—Apr. 6	657	27.3	71.670	98.970	4.2	10.9	15.1	558.030	1.0
7	598	31.8	67.000	98.800	5.3	11.2	16.5	499.200	1.0
8	627	7.4	55.959	63.359	1.2	8.9	10.1	563.641	1.0
9	615	9.0	65.280	74.280	1.5	10.6	12.1	540.720	1.0
10	476	19.5	64.930	84.430	4.1	13.6	17.7	391.570	1.0
11	510	(*b*)	49.415	49.415	....	9.7	9.7	460.585	1.0
12	597	35.0	62.360	97.360	5.9	10.4	16.3	499.640	2.0
13	660	35.3	59.545	94.845	5.3	9.0	14.4	565.155	2.0
14	560	21.8	69.340	91.140	3.9	12.4	16.3	468.860	3.0
Total	5,300	187.1	565.499	752.599	3.5	10.7	14.2	4,547.401	13.0
Average	589	20.8	62.833	83.622	....	....	....	505.378	....
After period.									
1903—Apr. 15	221.3	(*b*)	40.965	40.965	....	18.5	18.5	180.335	....
16	188.0	27.5	52.263	79.763	14.6	27.8	42.4	108.237	....
17	578.0	17.0	39.170	56.170	2.9	6.8	9.7	521.830	....
18	634.0	51.7	54.684	106.384	8.2	8.6	16.8	527.616	....
19	588.0	32.2	62.240	94.440	5.5	10.6	16.1	493.560	....
20	619.0	44.5	55.360	99.860	7.2	8.9	16.1	519.140	....
21	535.0	14.8	54.068	68.868	2.8	10.1	12.9	466.132	....
22	533.0	20.4	52.165	72.565	3.8	9.8	13.6	460.435	....
Total	3,896.3	208.1	410.915	619.015	5.3	10.5	15.9	3,277.285	....
Average	487	26.0	51.364	77.364	....	....	....	409.636	....

a Discarded. *b* No movement.

Table XCII.—*Summary of solids balances for Series IV.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 8	4,703 (5,341)	142.3	...... (476.572)	569.132	3.0	...... (8.9)	12.1	4,133.868	....
No. 9	4,811	233.6	489.274	722.874	4.9	10.2	15.0	4,088.126	......
No. 10	5,120	204.9	500.424	705.324	4.0	9.8	13.8	4,414.676	......
Total	14,634 (15,272)	580.8	...... (1,466.270)	1,997.330	4.0	...... (9.6)	13.6	12,636.670	....
Average	636 (636)	25.3	...... (61.095)	86.888	....	....	....	549.112	....
Preservative period.									
First subperiod:									
No. 8	2,658	158.3	230.856	389.156	6.0	8.7	14.6	2,268.844	2
No. 9	2,411	124.4	250.488	374.888	5.2	10.4	15.5	2,036.112	2
No. 10	2,692	159.2	240.212	399.412	5.9	8.9	14.8	2,292.588	2
Total	7,761	441.9	721.556	1,163.456	5.7	9.3	15.0	6,597.544	6
Average	647	36.8	60.130	96.930	......	......	......	550.070	......
Second subperiod:									
No. 8	2,534	116.6	233.963	350.563	4.6	9.2	13.8	2,183.437	4
No. 9	2,427	81.6	255.704	337.304	3.4	10.5	13.9	2,089.696	4
No. 10	2,723	115.3	233.786	349.086	4.2	8.6	12.8	2,373.914	4
Total	7,684	313.5	723.453	1,036.953	4.1	9.4	13.5	6,647.047	12
Average	640	26.1	60.288	86.388	......	......	......	553.612	......
Subperiods 1 and 2:									
Total	15,445	755.4	1,445.009	2,200.409	4.9	9.4	14.2	13,244.591	18
Average	644	31.5	60.209	91.709	......	......	......	552.291	......
Third subperiod:									
No. 8	3,344	133.5	289.848	423.348	4.0	8.7	12.7	2,920.652	5
No. 9	2,988	147.7	321.913	469.613	4.9	10.8	15.7	2,518.387	5
No. 10	3,409	157.3	294.602	451.902	4.6	8.6	13.2	2,957.098	5
Total	9,741	438.5	906.363	1,344.863	4.5	9.3	13.8	8,396.137	15
Average	649	29.2	60.424	89.624	......	......	......	559.376	......
Subperiods 1, 2, and 3:									
Total	25,186	1,193.9	2,351.372	3,545.272	4.7	9.3	14.1	21,640.728	33
Average	646	30.6	60.292	90.892	......	......	......	555.108	......
Fourth subperiod:									
No. 8	3,226	139.3	256.958	396.258	4.3	8.0	12.3	2,829.742	11
No. 9	3,031	135.7	319.750	455.450	4.5	10.5	15.0	2,575.550	11
No. 10	3,462	163.2	289.202	452.402	4.7	8.4	13.1	3,009.598	11
Total	9,719	438.2	865.910	1,304.110	4.5	8.9	13.4	8,414.890	33
Average	648	29.2	57.727	86.941	......	......	......	561.059	......
Entire preservative period:									
Total	34,905	1,632.1	3,217.282	4,849.382	4.7	9.2	13.9	30,055.618	66
Average	646	30.2	59.579	89.803	......	......	......	556.197	......
After period.									
No. 8	4,787	223.5	415.333	638.833	4.7	8.7	13.3	4,148.167	......
No. 9	4,817	206.8	485.794	692.594	4.3	10.1	14.4	4,124.406	......
No. 10	2,987	134.2	358.980	493.180	4.5	12.0	16.5	2,493.820	......
Total	12,591	564.5	1,260.107	1,824.607	4.5	10.0	14.5	10,766.393	......
Average	547	24.5	54.787	79.287	......	......	......	467.713	......

TABLE XCIII.—*Solids balances for Series V.*

No. 1.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	(a)	....	....	....	....	....	....	....	....
25	626.0	24.5	63.386	87.886	3.9	10.1	14.0	538.114	....
26	638.0	21.3	61.163	82.463	3.3	9.6	12.9	555.537	....
27	646.0	23.7	59.160	82.860	3.7	9.1	12.8	563.140	....
28	525.5	27.7	59.856	87.556	5.3	11.4	16.7	437.944	....
29	627.0	28.4	59.991	88.391	4.5	9.6	14.1	538.609	....
30	628.0	22.0	65.464	87.464	3.5	10.4	13.9	540.536	....
May 1	645.0	48.5	56.791	105.291	7.5	8.8	16.3	539.709	....
Total	4,335.5	196.1	425.811	621.911	4.5	9.8	14.3	3,713.589	....
Average	619.3	28.0	60.830	88.844	....	....	....	530.513	....
Preservative period.									
First subperiod:									
1903—May 2	635.0	46.5	62.739	109.239	7.3	9.9	17.2	525.761	0.5
3	654.0	11.7	63.284	74.984	1.8	9.7	11.5	579.016	.5
4	662.0	36.0	75.029	111.029	5.4	11.3	16.8	550.971	.5
5	630.0	25.5	61.072	86.572	4.0	9.7	13.7	543.428	.5
6	659.0	36.0	60.760	96.760	5.5	9.2	14.7	562.240	.5
7	643.0	50.9	59.241	110.141	7.9	9.2	17.1	532.859	.5
8	647.0	17.9	57.163	75.063	2.8	8.8	11.6	571.937	.5
9	660.0	37.0	64.876	101.876	5.6	9.8	15.4	558.124	.5
10	653.0	47.9	59.388	107.288	7.3	9.1	16.4	545.712	.5
11	633.0	23.9	61.208	85.108	3.8	9.7	13.4	547.892	.5
12	604.0	32.3	65.317	97.617	5.3	10.8	16.1	506.383	.5
13	635.0	23.8	58.741	82.541	3.7	9.3	13.0	552.459	.5
Total	7,715.0	389.4	748.818	1,138.218	5.0	9.7	14.8	6,576.782	6.0
Average	643.0	32.4	62.402	94.851	....	....	....	548.065	....
Second subperiod:									
1903—May 14	660.0	27.8	62.453	90.253	4.2	9.5	13.7	569.747	0.5
15	616.0	43.0	58.212	101.212	7.0	9.4	16.4	514.788	.5
16	622.0	40.2	53.420	93.620	6.5	8.6	15.1	528.380	.5
17	649.0	10.0	60.000	70.000	1.5	9.2	10.8	579.000	.5
18	590.0	26.7	56.419	83.119	4.5	9.6	14.1	506.881	.5
19	599.0	26.2	63.107	89.307	4.4	10.5	14.9	509.693	.5
20	667.0	40.9	58.388	99.288	6.1	8.8	14.9	567.712	.5
21	645.0	28.5	59.686	88.186	4.4	9.2	13.7	556.814	.5
22	614.0	29.5	58.467	87.967	4.8	9.5	14.3	526.033	.5
23	685.0	24.7	56.801	81.501	3.6	8.3	11.9	603.499	.5
24	658.0	33.4	58.744	92.144	5.1	8.9	14.0	565.856	.5
25	625.0	26.4	60.520	86.920	4.2	9.7	13.9	538.080	.5
Total	7,630.0	357.3	706.217	1,063.517	4.7	9.3	13.9	6,566.483	6.0
Average	636.0	29.8	58.851	88.626	....	....	....	547.207	....
Third subperiod:									
1903—May 26	639.0	43.4	61.675	105.075	6.8	9.6	16.4	533.925	0.5
27	595.0	23.4	61.782	85.182	3.9	10.4	14.3	509.818	.5
28	607.0	34.8	58.675	93.475	5.7	9.7	15.4	513.525	.5
29	685.0	26.4	61.520	87.920	3.8	9.0	12.8	597.080	.5
30	562.0	26.1	62.313	88.413	4.6	11.1	15.7	473.587	.5
31	(609.0)	Lost.	(57.113)	....	....	(9.3)	....	....	.5
June 1	627.0	55.3	59.776	115.076	8.8	9.5	18.4	511.924	.5
2	626.0	7.2	62.057	69.257	1.2	9.9	11.1	556.743	.5
3	637.0	35.5	59.168	94.668	5.6	9.3	14.9	542.332	.5
4	676.0	30.7	62.255	92.955	4.5	9.2	13.8	583.045	.5
5	666.0	33.3	60.368	93.668	5.0	9.1	14.1	572.332	.5
6	635.0	29.9	60.763	90.663	4.7	9.6	14.3	544.337	.5
Total	6,955.0	346.0	....	1,016.352	5.0	....	14.6	5,938.648	6.0
	(7,564.0)	....	(727.465)	....	....	(9.6)	....	....	....
Average	632.0	31.4	....	92.396	....	....	....	539.877	....
	(630.0)	....	(60.622)	....	....	....	....	....	....
Fourth subperiod:									
1903—June 7	660.0	27.1	56.602	83.702	4.1	8.6	12.7	576.298	0.5
8	611.0	31.9	59.729	91.629	5.2	9.8	15.0	519.371	.5
9	676.0	37.5	55.061	92.561	5.5	8.1	13.7	583.436	.5
10	699.0	37.2	58.216	95.416	5.3	8.3	13.7	603.584	.5
11	700.0	40.9	58.352	99.252	5.8	8.3	14.2	600.748	.5
12	665.0	43.0	60.192	103.192	6.5	9.1	15.5	561.808	.5

a Discarded.

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 1—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Fourth subperiod—Continued.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—June 13	627.0	39.9	60.763	100.663	6.4	9.7	16.1	526.337	0.5
14	674.0	23.0	59.621	82.621	3.4	8.8	12.3	591.379	.5
15	591.0	20.9	58.509	79.409	3.5	9.9	13.4	511.591	.5
16	647.0	50.5	59.402	109.902	7.8	9.2	17.0	537.098	.5
17	668.0	38.0	56.025	94.025	5.7	8.4	14.1	573.975	.5
18	654.0	46.8	58.608	105.408	7.1	9.0	16.1	548.592	.5
19	704.0	59.8	57.712	117.512	8.5	8.2	16.7	586.488	.5
20	698.0	39.0	55.853	94.853	5.6	8.0	13.6	603.147	.5
Total	9,274.0	535.5	814.648	1,350.148	5.8	8.8	14.6	7,923.852	7.0
Average	662.0	38.2	58.189	96.439	......	......	......	565.989	......
Entire preservative period:									
Total	31,574.0	1,628.2	......	4,568.235	5.1	......	14.5	27,005.766	25.0
	(32,183.0)	......	(2,997.148)	......	......	(9.3)	......	......	......
Average	644.0	33.2	......	93.229	......	......	......	551.138	......
	(644.0)	......	(59.943)	......	......	......	......	......	......
After period.									
1903—June 21	588.0	57.2	60.000	117.200	9.7	10.2	19.9	470.800	......
22	680.0	23.0	54.383	77.383	3.4	8.0	11.4	602.617	......
23	707.0	49.0	62.196	111.196	6.9	8.8	15.7	595.804	......
24	646.0	44.5	57.722	102.222	6.9	8.9	15.8	543.778	......
25	676.0	40.4	59.780	100.180	6.0	8.8	14.8	575.820	......
26	568.0	64.0	57.835	121.835	11.3	10.2	21.4	446.165	......
27	(638.0)	Lost.	(60.143)	......	......	(9.4)	......	......	......
28	644.0	35.2	62.563	97.763	5.5	9.7	15.2	546.237	......
29	620.0	32.0	62.108	94.108	5.2	10.0	15.2	525.892	......
Total	5,129.0	345.3	......	821.887	6.7	......	16.0	4,307.113	......
	(5,767.0)	......	(536.730)	......	......	(9.3)	......	......	......
Average	641.0	43.2	......	102.736	......	......	......	538.389	......
	(641.0)	......	(59.637)	......	......	......	......	......	......

No. 2.

Period and date.	1	2	3	4	5	6	7	8	9
Fore period.									
1903—Apr. 24	676	29.8	57.624	87.424	4.4	8.5	12.9	588.576	......
25	630	29.5	52.610	82.110	4.7	8.4	13.0	547.890	......
26	652	33.7	51.022	84.722	5.2	7.8	13.0	567.278	......
27	651	(*a*)	52.741	52.741	......	8.1	8.1	598.259	......
28	(581)	Lost.	(55.876)	......	......	(9.6)	......	......	......
29	550	16.7	54.481	71.181	3.0	9.9	12.9	478.819	......
30	560	21.6	48.770	70.370	3.9	8.7	12.6	489.630	......
May 1	584	25.6	54.029	79.629	4.4	9.3	13.6	504.371	......
Total	4,303	156.9	......	528.177	3.6	......	12.3	3,774.823	......
	(4,884)	......	(427.153)	......	......	(8.7)	......	......	......
Average	615	22.4	......	75.454	......	......	......	539.546	......
	(610)	......	(53.394)	......	......	......	......	......	......
Preservative period.									
First subperiod:									
1903—May 2	586	31.0	54.242	85.242	5.3	9.3	14.5	500.758	0.5
3	636	33.1	54.528	87.628	5.2	8.6	13.8	548.372	.5
4	657	20.0	56.560	76.560	3.0	8.6	11.7	580.440	.5
5	627	22.5	50.300	72.800	3.6	8.0	11.6	554.200	.5
6	649	28.4	63.910	92.310	4.4	9.8	14.2	556.690	.5
7	596	35.4	44.270	79.670	5.9	7.4	13.4	516.330	.5
8	576	26.9	44.315	71.215	4.7	7.7	12.4	504.785	.5
9	606	19.3	49.915	69.215	3.2	8.2	11.4	536.785	.5
10	576	27.7	48.150	75.850	4.8	8.4	13.2	500.150	.5
11	608	31.7	49.885	81.585	5.2	8.2	13.4	526.415	.5
12	595	27.9	55.900	83.800	4.7	9.4	14.1	511.200	.5
13	624	22.3	53.310	75.610	3.6	8.5	12.1	548.390	.5
Total	7,336	326.2	625.285	951.485	4.4	8.5	13.0	6,384.515	6.0
Average	611	27.2	52.107	79.290	......	......	......	531.710	......

[a] No movement.

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 2—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Second subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—May 14	565	25.7	54.830	80.530	4.5	9.7	14.3	484.470	0.5
15	620	27.1	47.800	74.900	4.4	7.7	12.1	545.100	.5
16	619	25.4	52.528	77.928	4.1	8.5	12.6	541.072	.5
17	512	23.5	51.312	74.812	4.6	10.0	14.6	437.188	.5
18	624	26.0	45.475	71.475	4.2	7.3	11.5	552.525	.5
19	551	34.4	46.935	81.335	6.2	8.5	14.8	469.665	.5
20	510	21.9	51.100	73.000	4.3	10.0	14.3	437.000	.5
21	565	21.4	45.423	66.823	3.8	8.0	11.8	498.177	.5
22	543	22.2	48.610	70.810	4.1	9.0	13.0	472.190	.5
23	554	29.6	47.710	77.310	5.3	8.6	14.0	476.690	.5
24	479	19.2	52.185	71.385	4.0	10.9	14.9	407.615	.5
25	584	22.9	44.180	67.080	3.9	7.6	11.5	516.920	.5
Total	6,726	299.3	588.088	887.388	4.4	8.7	13.2	5,838.612	6.0
Average	560	24.9	49.007	73.949	......	......	......	486.051	......
Third subperiod:									
1903—May 26	525	28.4	49.515	77.915	5.4	9.4	14.8	447.085	0.5
27	536	20.0	49.225	69.225	3.7	9.2	12.9	466.775	.5
28	494	36.5	42.630	79.130	7.4	8.6	16.0	414.870	.5
29	504	12.5	48.881	61.381	2.5	9.7	12.2	442.619	.5
30	447	20.3	49.579	69.879	4.5	11.1	15.6	377.121	.5
31	444	20.2	49.005	69.205	4.5	11.0	15.6	374.795	.5
June 1	464	36.1	44.636	80.736	7.8	9.6	17.4	383.264	.5
2	485	20.0	42.336	62.336	4.1	8.7	12.9	422.664	.5
3	368	27.0	39.524	66.524	7.3	10.7	18.1	301.476	.5
4	440	18.0	42.634	60.634	4.1	9.7	13.8	379.366	.5
5	370	12.4	35.512	47.912	3.4	9.6	12.9	322.088	.5
6	470	26.3	43.881	70.184	5.6	9.3	14.9	399.816	.5
Total	5,547	277.7	537.361	815.061	5.0	9.7	14.7	4,731.939	6.0
Average	462	23.1	44.780	67.921	......	......	......	394.079	......
Fourth subperiod:									
1903—June 7	450	25.0	38.031	63.031	5.6	8.5	14.0	386.969	0.5
8	518	6.0	37.632	43.632	1.2	7.3	8.4	474.368	.5
9	386	32.0	33.859	65.859	8.3	8.8	17.1	320.141	.5
10	525	15.5	39.337	54.837	3.0	7.5	10.4	470.163	.5
11	456	16.2	40.786	56.986	3.6	8.9	12.5	399.014	.5
12	570	15.2	35.460	50.660	2.7	6.2	8.9	519.340	.0
13	469	22.9	44.633	67.533	4.9	9.5	14.4	401.467	.0
14	497	8.8	48.000	56.800	1.8	9.7	11.4	440.200	.0
15	545	26.2	37.191	63.391	4.8	6.8	11.6	481.609	.0
16	503	23.8	52.646	76.446	4.7	10.5	15.2	426.554	.0
17	556	36.6	47.336	83.936	6.6	8.5	15.1	472.064	.0
18	471	29.2	45.071	74.271	6.2	9.6	15.8	396.729	.0
19	602	34.5	46.111	80.611	5.7	7.7	13.4	521.389	.0
20	548	60.6	45.060	105.660	11.1	8.2	19.3	442.340	.0
Total	7,096	352.5	591.153	943.653	5.0	8.3	13.3	6,152.347	2.5
Average	507	25.2	42.225	67.404	......	......	......	439.596	......
Entire preservative period:									
Total	26,705	1,255.7	2,341.887	3,597.587	......	......	......	23,107.413	20.5
Average	534	25.1	46.838	71.952	......	......	......	5,778.353	......
After period.									
1903—June 21	426	25.0	48.811	73.811	5.9	11.5	17.3	352.189	......
22	571	26.2	42.728	68.928	4.6	7.5	12.1	502.072	......
23	567	32.2	44.009	76.209	5.7	7.8	13.4	490.791	......
24	626	50.5	46.571	97.071	8.1	7.4	15.5	528.929	......
25	557	40.0	49.050	89.050	7.2	8.8	16.0	467.950	......
26	599	26.0	55.900	81.900	4.3	9.3	13.7	517 100	......
27	649	38.0	47.470	85.470	5.9	7.3	13.2	563.530	......
28	596	23.0	60.051	83.051	3.9	10.1	13.9	512.949	......
29	573	22.0	54.029	76.029	3.8	9.4	13.3	496.971	......
Total	5,164	282.9	448.619	731.519	5.5	8.7	14.2	4,432.481	......
Average	574	31.4	49.847	81.280	......	......	......	492.720	......

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 3.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	(519)	Lost.	(52.861)			(10.2)			
25	463	14.0	37.318	51.318	3.0	8.1	11.1	411.682	
26	518	29.0	53.469	82.469	5.6	10.3	15.9	435.531	
27	523	10.4	50.323	60.723	2.0	9.6	11.6	462.277	
28	528	40.4	60.505	100.905	7.6	11.5	19.1	427.095	
29	547	24.6	48.829	73.429	4.5	8.9	13.4	473.571	
30	501	19.0	52.577	71.577	3.8	10.5	14.3	429.423	
May 1	544	35.8	48.622	84.422	6.6	8.9	15.5	459.558	
Total	3,624	173.2		524.843	4.8		14.5	3,099.157	
	(4,143)		(404.504)			(9.8)			
Average	518	21.7		74.977				443.023	
	(518)		(50.563)						
Preservative period.									
First subperiod:									
1903—May 2	490	23.2	52.871	76.071	4.7	10.8	15.5	413.929	0.5
3	526	28.0	43.389	71.389	5.3	8.2	13.6	454.611	.5
4	[556]	[26.0]			[4.7]				.5
5	532	20.8	49.936	70.736	3.9	9.4	13.3	461.264	.5
6	594	17.5	50.568	68.068	2.9	8.5	11.5	525.932	.5
7	586	30.9	49.304	80.204	5.3	8.4	13.7	505.796	.5
8	619	22.9	51.229	74.129	3.7	8.3	12.0	544.871	.5
9	659	25.4	49.784	75.184	3.9	7.6	11.4	583.816	.5
10	658	23.2	66.337	89.537	3.5	10.1	13.6	568.463	.5
11	589	22.0	54.929	76.929	3.7	9.3	13.1	512.071	.5
12	653	37.2	55.448	92.648	5.7	8.5	14.2	560.352	.5
13	583	26.5	52.557	79.057	4.5	9.0	13.6	503.943	.5
Total	6,489		576.352	853.952		8.9	13.2	5,635.048	6.0
	[7,045]	[303.6]			[4.3]				
Average	590		52.396	77.632				512.368	
	(587)	(25.3)							
Second subperiod:									
1903—May 14	605	30.8	57.212	88.012	5.1	9.5	14.5	516.988	0.5
15	595	23.3	50.642	73.942	3.9	8.5	12.4	521.058	.5
16	614	24.7	56.522	81.222	4.0	9.2	13.2	532.778	.5
17	600	35.0	54.004	89.004	5.8	9.0	14.8	510.996	.5
18	612	17.9	52.896	70.796	2.9	8.6	11.6	541.204	.5
19	496	24.9	50.446	75.346	5.0	10.2	15.2	420.654	.5
20	586	17.2	40.134	57.334	2.9	6.8	9.8	528.666	.5
21	674	26.1	55.037	81.137	3.9	8.2	12.0	592.863	.5
22	614	38.0	51.998	89.998	6.2	8.5	14.7	524.002	.5
23	642	23.8	57.977	81.777	3.7	9.0	12.7	560.223	.5
24	552	26.9	55.272	82.172	4.9	10.0	14.9	469.828	.5
25	702	25.0	52.876	77.876	3.6	7.5	11.1	624.124	.5
Total	7,292	313.6	635.016	948.616	4.3	8.7	13.0	6,343.384	6.0
Average	608	26.1	52.918	79.051				528.949	
Subperiods 1 and 2:									
Total	13,781		1,211.368	1,802.568		8.8	13.1	11,978.432	12.0
	[14,337]	[617.2]			[4.9]				
Average	599		52.668	78.372				520.628	
	[597]	[25.7]							
Third subperiod:									
1903—May 26	600	33.5	54.782	88.282	5.6	9.1	14.7	511.718	0.5
27	591	23.2	55.292	78.492	3.9	9.4	13.3	512.508	.5
28	636	38.8	55.448	94.248	6.1	8.7	14.8	541.752	.5
29	586	21.3	47.496	68.796	3.6	8.1	11.7	517.204	.5
30	507	38.9	64.008	102.908	7.7	12.6	20.3	404.092	.5
31	(576)	Lost.	(56.054)			(9.7)			.5
June 1	574	34.5	52.399	86.899	6.0	9.1	15.1	487.101	.5
2	573	13.1	55.607	68.707	2.3	9.7	12.0	504.293	.5
3	591	21.1	50.836	71.936	3.6	8.6	12.2	519.064	.5
4	624	26.7	52.646	79.346	4.3	8.4	12.7	544.654	.5
5	582	22.2	45.574	67.774	3.8	7.8	11.6	514.226	.5
6	636	22.8	47.628	70.428	3.6	7.5	11.1	565.572	.5
Total	6,500	296.1		877.816	4.6		13.5	5,622.184	6.0
	(7,076)		(637.770)			(9.0)			
Average	591	26.9		79.783				511.217	
	(590)		(53.148)						

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 3—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Boric acid administered.
Preservative period—Continued.									
Subperiods 1, 2, and 3:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
Total	20,281	....	....	2,680.384	....	....	13.2	17,600.616	18.0
	(20,857)	....	(1,819.138)	....	....	(8.9)	....	....	....
	[20,837]	[913.3]	....	....	[4.4]	....	....	....	....
Average	596	....	....	78.835	....	....	....	517.165	....
	(596)	....	(52.833)	....	....	....	....	....	....
	[595]	[26.1]	....	....	....	....	....	....	....
Fourth subperiod:									
1903—June 7	603	10.2	49.235	59.435	1.7	8.2	9.9	543.565	0.5
8	596	32.1	47.970	80.070	5.4	8.0	13.4	515.930	.5
9	660	24.1	46.805	70.905	3.7	7.1	10.8	589.095	.5
10	655	26.4	44.494	70.894	4.0	6.8	10.8	584.106	.5
11	668	30.3	52.173	82.473	4.5	7.8	12.3	585.527	.5
12	591	13.6	55.125	68.725	2.3	9.3	11.6	522.275	.5
13	579	27.7	57.619	85.319	4.8	10.0	14.8	493.681	.5
14	598	29.5	58.692	88.192	4.9	9.8	14.7	509.808	.5
15	622	18.5	51.871	70.371	3.0	8.3	11.3	551.629	.5
16	586	40.5	52.005	92.505	6.9	8.9	15.8	493.495	.5
17	647	33.6	45.644	79.244	5.2	7.0	12.0	567.756	.5
18	662	45.2	49.662	94.802	6.8	7.5	14.3	567.198	.5
19	618	10.3	57.345	67.645	1.7	9.3	11.0	550.355	.5
20	655	52.5	48.363	100.863	8.0	7.4	15.4	554.137	.5
Total	8,740	394.5	716.943	1,111.443	4.5	8.2	12.7	7,628.557	7.0
Average	624	28.2	51.210	79.389	....	....	....	544.611	....
Entire preservative period:									
Total	29,021	....	....	3,791.827	....	....	13.0	25,229.173	25.0
	(29,597)	....	(2,556.081)	....	....	(8.7)	....	....	....
	[29,577]	[1,307.8]	....	....	[4.4]	....	....	....	....
Average	605	....	....	78.996	....	....	....	526.009	....
	(604)	....	(52.367)	....	....	....	....	....	....
	[604]	[26.7]	....	....	....	....	....	....	....
After period.									
1903—June 21	561	33.0	57.565	90.565	5.9	10.2	16.1	470.435	....
22	671	31.6	43.590	75.190	4.7	6.5	11.2	595.810	....
23	822	23.0	59.819	82.819	2.8	7.3	10.1	739.181	....
24	670	52.7	54.121	106.821	7.8	8.1	15.9	563.179	....
25	737	46.9	53.684	100.584	6.4	7.3	13.7	636.416	....
26	741	35.9	62.965	98.865	4.8	8.5	13.3	642.135	....
27	717	30.7	67.801	98.501	4.1	9.1	13.2	618.499	....
28	770	44.7	55.158	99.858	5.8	7.2	13.0	670.142	....
29	650	22.0	54.237	76.237	3.4	8.3	11.7	573.763	....
Total	6,369	320.5	508.940	829.440	5.0	8.0	13.0	5,539.560	....
Average	707	35.6	56.549	92.149	....	....	....	614.851	....

No. 4.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—Apr. 24	652	17.4	52.900	70.300	2.7	8.1	10.8	581.700	....
25	512	(*a*)	52.260	52.260	....	10.2	10.2	459.740	....
26	511	29.0	45.506	71.506	5.6	8.9	14.5	439.494	....
27	[505]	[25.8]	Lost.	....	[5.1]	....	....	....	....
28	559	22.0	55.360	77.360	3.9	9.9	13.8	481.640	....
29	347	17.7	49.520	67.220	5.1	14.3	19.4	279.700	....
30	512	27.7	51.830	79.530	5.4	10.1	15.5	432.470	....
May 1	502	40.8	65.890	106.690	8.1	13.1	21.3	395.310	....
Total	3,598	....	373.266	527.866	....	10.4	14.7	3,070.134	....
	[4,103]	[180.4]	....	....	[4.4]	....	....	....	....
Average	514	....	53.324	75.409	....	....	....	438.591	....
	[513]	[22.6]	....	....	....	....	....	....	....

a No movement.

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 4—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax ad-minis-tered.
Preservative period.									
First subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—May 2	549	(*a*)	58.685	58.685	....	10.7	10.7	490.315	0.5
3	503	35.0	55.980	90.980	7.0	11.1	18.1	412.020	.5
4	538	17.7	62.480	80.180	3.3	11.6	14.9	457.820	.5
5	203	34.5	55.070	89.570	17.0	27.1	44.1	113.430	.5
6	555	16.2	57.155	73.355	2.9	10.3	13.2	481.645	.5
7	489	26.1	52.730	78.830	5.3	10.8	16.1	410.170	.5
8	527	25.9	50.795	76.695	4.9	9.6	14.6	450.305	.5
9	511	32.0	48.730	80.730	6.3	9.5	15.8	430.270	.5
10	481	13.4	50.130	63.530	2.8	10.4	13.2	417.470	.5
11	487	26.7	51.980	78.680	5.5	10.7	16.2	408.320	.5
12	482	28.4	53.275	81.675	5.9	11.0	16.9	400.325	.5
13	472	22.2	48.915	71.115	4.7	10.4	15.1	400.885	.5
Total	5,797	278.1	645.925	924.025	4.8	11.1	15.9	4,872.975	6.0
Average	483	23.2	53.827	77.002	....	....	....	405.998	....
Second subperiod:									
1903—May 14	535	27.6	76.715	104.315	5.2	14.3	19.5	430.685	0.5
15	560	11.4	50.829	62.229	2.0	9.1	11.1	497.771	.5
16	602	31.0	67.920	98.920	5.1	11.3	16.4	503.080	.5
17	529	24.1	60.610	84.710	4.6	11.4	16.4	444.290	.5
18	604	22.3	57.690	79.990	3.7	9.6	13.2	524.010	.5
19	537	56.8	61.446	118.246	10.6	11.4	22.0	418.754	.5
20	568	(*a*)	59.960	59.960	....	10.6	10.6	508.040	.5
21	545	8.7	58.016	66.716	1.6	10.6	12.2	478.284	.5
22	558	43.5	59.270	102.770	7.8	10.6	18.4	455.230	.5
23	509	36.3	55.445	91.745	7.1	10.9	18.0	417,255	.5
24	562	23.7	55.777	79.477	4.2	9.9	14.1	482.523	.5
25	546	18.4	57.005	75.405	3.4	10.4	13.8	470.595	.5
Total	6,655	303.8	720.683	1,024.483	4.6	10.8	15.4	5,630.517	6.0
Average	555	25.3	60.057	85.374	....	....	....	469.626	....
Subperiods 1 and 2:									
Total	12,452	581.9	1,366.608	1,948.508	4.7	11.0	15.6	10,503.492	12.0
Average	519	24.2	56.942	81.188	....	....	....	437.812	....

No. 5.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax ad-minis-tered.
Fore period.									
1903—Apr. 24	502.00	25.4	64.896	90.296	5.1	12.9	18.0	411.704	....
25	654.00	9.2	62.666	71.866	1.4	9.6	11.0	582.134	....
26	659.00	40.5	61.615	102.115	6.1	9.3	15.5	556.885	....
27	676.00	44.8	63.181	107.981	6.6	9.3	16.0	568.019	....
28	748.00	(*a*)	59.976	59.976	....	8.0	8.0	688.024	....
29	677.00	20.1	66.160	86.260	3.0	9.8	12.7	590.740	....
30	714.00	35.0	68.776	103.776	4.9	9.6	14.5	610.224	....
May 1	721.00	40.5	66.015	106.515	5.6	9.2	14.8	614.485	....
Total	5,351.00	215.5	513.285	728.785	4.0	9.6	13.6	4,622.215	....
Average	668.88	26.94	64.161	91.028	....	....	....	577.777	....
Preservative period.									
First subperiod:									
1903—May 2	754.00	16.4	64.600	81.000	2.2	8.6	10.7	673.000	0.5
3	690.00	15.3	71.721	87.021	2.2	10.4	12.6	602.979	.5
4	724.00	45.5	68.679	114.179	6.3	9.5	15.8	609.821	.5
5	787.00	25.3	62.975	88.275	3.2	8.0	11.2	698.725	.5
6	759.00	11.6	68.214	79.814	1.5	9.0	10.5	679.186	.5
7	705.00	35.7	63.039	98.739	5.1	8.9	14.0	606.261	.5
8	788.00	36.7	64.249	100.949	4.7	8.2	12.8	687.051	.5
9	794.00	44.4	58.663	103.063	5.6	7.4	13.0	690.937	.5
10	725.00	40.1	63.092	103.192	5.5	8.7	14.2	621.808	.5
11	756.00	21.8	63.631	85.431	2.9	8.4	11.3	670.569	.5
12	793.00	29.0	61.520	90.520	3.7	7.8	11.4	702.480	.5
13	722.00	57.0	61.877	118.877	7.9	8.6	16.5	603.123	.5
Total	8,997.00	378.8	772.260	1,151.060	4.2	8.6	12.8	7,845.940	6.0
Average	749.75	31.57	64.355	95.922	....	....	....	653.828	....

a No movement.

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 5—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Second subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—May 14	707.00	(a)	64.896	64.896	......	9.2	9.2	642.104	0.5
15	745.00	38.1	64.298	102.398	5.1	8.6	13.7	642.602	.5
16	649.00	51.2	68.507	119.707	7.9	10.6	18.4	529.293	.5
17	692.00	(a)	64.141	64.141	......	9.3	9.3	627.859	.5
18	695.00	14.5	62.659	77.159	2.1	9.0	11.1	617.841	.5
19	625.00	(a)	59.098	59.098	......	9.5	9.5	565.902	.5
20	675.00	56.6	61.274	117.874	8.4	9.1	17.5	557.126	.5
21	720.00	(a)	62.349	62.349	......	8.7	8.7	657.651	.5
22	688.00	59.0	52.254	111.254	8.6	7.6	16.2	576.746	.5
23	666.00	59.1	62.328	121.428	8.9	9.4	18.2	544.572	.5
24	674.00	22.5	72.722	95.222	3.3	10.8	14.1	578.778	.5
25	(726.00)	Lost.	(61.162)	....	......	(8.4)	....	....	.5
Total	7,536.00)	301.0	....	995.526	4.0	......	13.2	6,540.474	6.0
	(8,262.00	....	(755.688)	....	......	(9.1)	....	....	
Average	685.00	27.4	....	90.539	......	......	....	594.461	......
	(688.00)	....	(62.974)	....	......	......	....	....	
Third subperiod:									
1903—May 26	662.00	4.3	67.424	71.724	0.6	10.2	10.8	590.276	0.5
27	307.00	(a)	50.549	50.549	......	16.5	16.5	256.451	.0
28	508.00	(a)	53.526	53.526	......	10.5	10.5	454.474	.5
29	614.00	62.3	56.560	118.860	10.1	9.2	19.4	495.140	.5
30	632.00	22.0	68.355	90.355	3.5	10.8	14.3	541.645	.5
31	575.00	44.8	71.669	116.469	7.8	12.5	20.3	458.531	.5
June 1	523.00	4.0	60.094	64.094	0.8	11.5	12.3	458.906	.5
2	539.00	38.3	63.846	102.146	7.1	11.8	19.0	436.854	.5
3	519.00	48.7	61.317	110.017	9.4	11.8	21.2	408.983	.5
4	598.00	17.7	59.903	77.603	3.0	10.0	13.0	520.397	.5
5	505.00	(a)	53.632	53.632	......	10.6	10.6	451.368	.5
6	650.00	57.6	73.662	131.262	8.9	11.3	20.2	518.738	.5
Total	6,632.00	299.7	740.537	1,040.237	......	......	....	5,591.763	5.5
Average	553.00	25.0	61.711	86.711	4.5	11.2	15.7	466.289	......
Fourth subperiod:									
1903—June 7	645.00	(a)	51.266	51.266	......	7.9	7.9	593.734	0.5
8	608.00	(a)	50.483	50.483	......	8.3	8.3	557.517	.5
9	637.00	58.3	59.355	117.655	9.2	9.3	18.5	519.345	.5
10	673.00	(a)	65.974	65.974	......	9.8	9.8	607.026	.5
11	616.00	54.1	64.937	119.037	8.8	10.5	19.3	496.963	.5
12	637.00	22.0	70.680	92.680	3.5	11.1	14.5	544.320	.5
13	619.00	67.2	71.315	138.515	10.9	11.5	22.4	480.485	.5
14	552.00	(a)	54.938	54.938	......	10.0	10.0	497.062	.5
15	603.00	34.9	62.681	97.581	5.8	10.4	16.2	505.419	.5
16	610.00	24.5	61.929	86.429	4.0	10.2	14.2	523.571	.5
17	693.00	56.9	64.467	121.367	8.2	9.3	17.5	571.633	.5
18	677.00	46.8	66.567	113.367	6.9	9.8	16.7	563.633	.5
19	710.00	(a)	59.226	59.226	......	8.3	8.3	650.774	.5
20	614.00	102.2	65.489	167.689	16.6	10.7	27.3	446.311	.5
Total	8,891.00	466.9	869.307	1,336.207	5.2	9.8	15.0	7,557.793	7.0
Average	635.00	33.4	62.093	95.493	......	......	....	539.507	......
Entire preservative period:									
Total	32,059.00	1,446.4	....	4,523.030	4.5	......	14.1	27,535.970	24.5
	(32,785.00)	....	(3,137.792)	....	......	(9.6)	....	....	......
Average	651.00	29.5	....	92.307	......	......	....	561.693	......
	(656.00)	....	(62.756)	....	......	......	....	....	......
After period.									
1903—June 21	595.00	(a)	64.518	64.518	......	10.8	10.8	530.482	......
22	674.00	40.5	51.761	92.261	6.0	7.7	13.7	581.736	......
23	707.00	16.0	65.386	81.386	2.3	9.2	11.5	625.614	......
24	716.00	13.0	56.602	99.602	6.0	7.9	13.9	616.398	......
25	715.00	59.0	64.107	123.107	8.3	9.0	17.2	591.893	......
26	643.00	42.0	51.568	96.568	6.5	8.5	15.0	546.432	......
27	666.00	30.2	59.025	89.225	4.5	8.9	13.4	576.775	......
28	459.00	48.4	65.631	114.031	10.5	14.3	24.8	344.969	......
29	619.00	16.0	60.282	76.282	2.6	9.7	12.3	542.718	......
Total	5,791.00	295.1	541.883	836.983	5.1	9.4	14.4	4,957.017	......
Average	644.00	32.8	60.209	93.009	......	......	....	550.991	......

(a) No movement.

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 6.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—April 24	(603.0)	Lost.	(38.495)	......	......	(6.4)	......	564.505	......
25	495.0	26.7	45.455	72.155	5.4	9.2	14.6	422.845	......
26	521.0	30.0	48.090	78.090	5.8	9.2	15.0	442.910	......
27	543.0	20.9	42.210	63.110	3.8	7.8	11.6	479.890	......
28	512.0	31.3	47.757	79.057	6.1	9.3	15.4	432.943	......
29	557.0	27.2	47.195	74.395	4.9	8.5	13.4	482.605	......
30	498.5	44.2	49.470	93.670	8.9	9.9	18.8	404.830	......
May 1	505.0	(a)	45.510	......	......	9.0	......	459.490	......
Total	3,631.5	180.3	......	505.987	5.0	......	14.0	3,125.513	......
	(4,234.5)	......	(364.182)	......	......	(8.6)	......	......	......
Average	519.0	25.8	......	72.284	......	......	......	446.716	......
	(529.0)	......	(45.523)	......	......	......	......	......	......
Preservative period.									
First subperiod:									
1903—May 2	512.0	32.8	51.680	84.480	6.4	10.1	16.5	427.520	0.5
3	563.0	34.3	50.530	84.830	6.1	9.0	15.1	478.170	.5
4	456.0	25.0	47.310	72.310	5.5	10.4	15.9	383.690	.5
5	559.0	18.1	42.450	60.550	3.2	7.6	10.8	498.450	.5
6	561.0	28.1	48.190	76.290	5.0	8.6	13.6	484.710	.5
7	514.0	47.2	50.100	97.300	9.2	9.7	18.9	416.700	.5
8	539.0	(a)	44.955	44.955	......	8.3	8.3	494.045	0
9	533.0	48.6	48.515	97.115	9.1	9.1	18.2	435.885	0
10	484.5	35.7	49.392	85.092	7.4	10.2	17.6	399.408	.5
11	552.0	9.2	46.865	56.065	1.7	8.5	10.2	495.935	.5
12	473.0	17.1	48.835	65.935	3.6	10.3	13.9	407.065	.5
13	516.0	30.8	51.730	82.530	6.0	10.0	16.0	433.470	.5
Total	6,262.5	326.9	580.552	907.452	5.2	9.3	14.5	5,355.048	5.0
Average	521.9	27.2	48.379	75.621	......	......	......	446.279	......
Second subperiod:									
1903—May 14	538.0	22.1	49.210	71.310	4.1	9.2	13.3	466.690	0.5
15	536.0	41.5	41.540	83.040	7.7	7.8	15.5	452.960	.5
16	467.0	23.0	45.455	68.455	4.9	9.7	14.6	398.545	.5
17	505.0	10.3	53.310	63.610	2.6	10.6	12.6	441.390	.5
18	542.0	30.1	44.247	74.347	5.6	8.2	13.8	467.653	.5
19	493.0	34.9	48.350	83.250	7.1	9.8	16.9	409.750	.5
20	521.0	29.6	49.049	78.649	5.7	9.4	15.1	442.351	.5
21	510.0	37.5	48.500	86.000	7.4	9.5	16.9	424.000	.5
22	589.0	23.8	50.100	73.900	4.0	8.5	12.5	515.100	.5
23	427.0	26.2	48.440	74.640	6.1	11.3	17.4	352.360	.5
24	527.0	38.4	49.578	87.978	7.3	9.4	16.7	439.022	.5
25	482.0	19.4	43.500	62.900	4.0	9.0	13.0	419.100	.5
Total	6,137.0	336.8	571.279	908.079	5.5	9.3	14.8	5,228.921	6.0
Average	511.0	28.1	47.606	75.673	......	......	......	435.327	......
Third subperiod:									
1903—May 26	365.0	16.5	47.000	63.500	4.5	12.9	17.4	301.500	0.5
27	512.0	(a)	45.451	45.451	......	8.9	8.9	466.549	.5
28	509.0	51.3	50.935	102.235	10.1	10.0	20.1	406.765	.5
29	547.0	54.6	43.970	98.570	10.0	8.0	18.0	448.430	.5
30	457.0	10.9	58.870	69.770	2.4	12.9	15.3	387.230	.5
31	476.0	20.9	44.980	65.880	4.4	9.4	13.8	410.120	.5
June 1	389.0	35.2	46.360	81.560	9.0	11.9	20.9	307.440	.5
2	513.0	35.2	49.010	84.210	6.9	9.6	16.4	428.790	.5
3	551.0	28.7	45.070	73.770	5.2	8.2	13.4	477.230	.5
4	572.0	17.8	49.030	66.830	3.1	8.6	11.7	505.170	.5
5	500.0	28.2	48.020	76.220	5.6	9.6	15.2	423.780	.5
6	483.0	15.5	47.230	62.730	3.2	9.8	13.0	420.270	.5
Total	5,874.0	314.8	575.926	890.726	5.4	9.8	15.2	4,983.274	6.0
Average	490.0	26.2	47.994	74.227	......	......	......	415.773	......
Fourth subperiod:									
1903—June 7	540.0	34.1	47.230	81.330	6.3	8.7	15.0	458.670	0.5
8	506.0	34.2	40.570	74.770	6.8	8.0	14.8	431.230	.5
9	509.0	35.4	42.792	78.192	7.0	8.4	15.4	430.808	.5
10	556.0	12.2	47.105	59.305	2.2	8.5	10.7	496.695	.5
11	552.0	22.4	38.855	61.255	4.1	7.0	11.1	490.745	.5
12	492.0	29.5	51.465	80.965	6.0	10.5	16.5	411.035	.0
13	438.0	22.0	49.070	71.070	5.0	11.2	16.2	366.930	.0
14	488.0	41.6	49.220	90.820	8.5	10.1	18.6	397.180	.0

TABLE XCIII.—*Solids balances for Series V*—Continued.

No. 6—Continued.

Period and date.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Borax administered.
Preservative period—Continued.									
Fourth subperiod—Continued.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
1903—June 15	502.0	27.1	47.530	74.630	5.4	9.5	14.9	427.370	0.0
16	446.0	28.1	44.170	72.270	6.3	9.9	16.2	373.730	.0
17	576.0	(*a*)	40.295	40.295	....	7.0	7.0	535.705	.0
18	569.0	73.2	45.475	118.675	12.9	8.0	20.9	450.325	.0
19	454.0	(*a*)	34.985	34.985	....	7.7	7.7	419.015	.0
20	(495.0)	Lost.	(45.305)	....	....	(9.2)	....	449.695	.0
Total	6,628.0	359.8	....	938.562	5.4	....	14.2	5,689.438	2.5
	(7,123.0)	....	(624.067)	....	....	(8.8)	....	....	....
Average	510.0	27.7	....	72.197	....	....	....	437.803	....
	(509.0)	....	(44.576)	....	....	....	....	....	....
Entire preservative period:									
Total	24,901.0	1,338.3	....	3,644.819	5.4	....	14.6	21,256.681	19.5
	(25,396.0)	....	(2,351.824)	....	....	(9.3)	....	....	....
Average	508.0	27.3	....	74.384	....	....	....	433.616	....
	(508.0)	....	(47.036)	....	....	....	....	....	....
After period.									
1903—June 21	500.0	26.5	45.305	71.805	5.3	9.1	14.4	428.195	....
22	530.0	51.3	44.590	95.890	9.7	8.4	18.1	434.110	....
23	555.0	36.3	45.645	81.945	6.5	8.2	14.7	473.055	....
24	545.0	55.2	37.456	92.656	10.1	6.9	17.0	452.344	....
25	517.0	(*a*)	45.950	45.950	....	8.9	8.9	471.050	....
26	637.0	12.0	38.370	50.370	1.9	6.0	7.9	586.630	....
27	560.0	70.0	49.224	119.224	12.5	8.8	21.3	440.776	....
28	600.0	24.5	50.596	75.096	4.1	8.4	12.5	524.904	....
29	555.0	(*a*)	41.775	41.775	....	7.5	7.5	513.225	....
Total	4,999.0	275.8	398.911	674.711	5.5	8.0	13.5	4,324.289	....
Average	555.0	30.6	44.323	74.968	....	....	....	480.032	....

a No movement.

TABLE XCIV.—*Summary of solids balances for Series V.*

Three men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	4,335.5	196.1	125.811	621.911	4.5	9.8	14.3	3,713.589	....
No. 3	3,624	173.2	....	524.843	4.8	....	14.5	3,099.157	....
	(4,143)	....	(401.504)	....	....	(9.8)	....	....	....
No. 5	5,351	215.5	513.285	728.785	4.0	9.6	13.6	4,622.215	....
Total	13,310.5	584.8	....	1,875.539	4.4	....	14.1	11,434.961	....
	(13,829.5)	....	(1,343.600)	....	....	(9.7)	....	....	....
Average	605.0	26.6	....	85.270	....	....	....	519.730	....
	(601)	....	(58.417)	....	....	....	....	....	....
Preservative period.									
First subperiod:									
No. 1	7,715	389.4	748.818	1,138.218	5.0	9.7	14.8	6,576.782	6.0
No. 3	6,189	....	576.352	853.952	....	8.9	13.2	5,635.018	6.0
	[7,015]	[303.6]	....	....	[4.3]	....	....	....	
No. 5	8,997	378.8	772.260	1,151.060	4.2	8.6	12.8	7,845.940	6.0
Total	23,201	....	2,097.430	3,143.230	....	9.0	13.5	20,057.770	18.0
	[23,757]	[1,071.8]	....	....	[4.5]	....	....	....	....
Average	663	....	59.927	89.827	....	....	....	572.173	....
	[660]	[29.8]	....	....	....	....	....	....	....

TABLE XCIV.—*Summary of solids balances for Series V*—Continued.

Three men—Continued.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Preservative period—Continued.									
Second subperiod:	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	7,630	357.3	706.217	1,063.517	4.7	9.3	13.9	6,566.483	6.0
No. 3	7,292	313.6	635.016	948.616	4.3	8.7	13.0	6,343.384	6.0
No. 5	7,536	301.0	......	995.526	4.0	......	13.2	6,540.474	6.0
	(8,262)	......	(755.688)	......	......	(9.1)	......	......	
Total	22,458	971.9	......	3,007.659	4.3	......	13.4	19,450.341	18.0
	(23,184)	......	(2,096.921)	......	......	(9.0)	......	......	......
Average	642	27.8	......	85.965	......	......	......	556.035	......
	(644)	......	(58.248)	......	......	......	......	......	......
Subperiods 1 and 2:									
Total	45,659	......	......	6,150.889	......	......	13.5	39,508.111	36.0
	(46,385)	......	(4,194.351)	......	......	(9.0)	......	......	......
	[46,215]	[2,043.7]	......	......	[4.4]	......	......	......	......
Average	652	......	......	87.846	......	......	......	564.154	......
	(653)	......	(59.075)	......	......	......	......	......	......
	[651]	[28.8]	......	......	......	......	......	......	......
Third subperiod:									
No. 1	6,955	346.0	......	1,016.352	5.0	......	14.6	5,938.648	6.0
	(7,564)	......	(727.465)	......	......	(9.6)	......	......	
No. 3	6,500	296.1	......	877.816	4.6	......	13.5	5,622.184	6.0
	(7,076)	......	(637.770)	......	......	(9.0)	......	......	
No. 5	6,632	299.7	740.537	1,040.237	4.5	11.2	15.7	5,591.763	5.5
Total	20,087	941.8	......	2,934.405	4.7	......	14.6	17,152.595	17.5
	(21,272)	......	(2,105.772)	......	......	(9.9)	......	......	......
Average	591	27.7	......	86,306	......	......	......	504.694	......
	(591)	......	(58.494)	......	......	......	......	......	......
Subperiods 1, 2, and 3:									
Total	65,746	......	......	9,085.294	......	......	13.8	56,660.706	53.5
	(67,657)	......	(6,300.123)	......	......	(9.3)	......	......	......
	[66,302]	[2,985.5]	......	......	[4.5]	......	......	......	......
Average	632	......	......	87.402	......	......	......	544.598	......
	(632)	......	(58.880)	......	......	......	......	......	......
	[631]	[28.4]	......	......	......	......	......	......	......
Fourth subperiod:									
No. 1	9,274	535.5	814.648	1,350.148	5.8	8.8	14.6	7,923.852	7.0
No. 3	8,740	394.5	716.943	1,111,443	4.5	8.2	12.7	7,628.557	7.0
To. 5	8,894	466.9	869.307	1,336.207	5.2	9.8	15.0	7,557.793	7.0
Total	26,908	1,396.9	2,400.898	3,797.798	5.2	8.9	14.1	23,110.202	21.0
Average	641	33.3	57.164	90.464	......	......	......	550.536	......
Entire preservative period:									
Total	92,654	......	......	12,883.092	......	......	13.9	79,770.908	74.5
	(94,565)	......	(8,701.021)	......	......	(9.2)	......	......	......
	[93,210]	[4,382.4]	......	......	[4.7]	......	......	......	......
Average	635	......	......	88.202	......	......	......	546.798	......
	(635)	......	(58.396)	......	......	......	......	......	......
	[634]	[29.8]	......	......	......	......	......	......	......
After period.									
No. 1	5,129	345.3	......	821.887	6.7	......	16.0	4,307.113	......
	(5,767)	......	(536.730)	......	......	(9.3)	......	......	......
No. 3	6,369	320.5	508.940	829.440	5.0	8.0	13.0	5,539.560	......
No. 5	5,794	295.1	541.883	836.983	5.1	9.4	14.4	4,957.017	......
Total	17,292	960.9	......	2,488.310	5.6	......	14.4	14,803.690	......
	(17,930)	......	(1,587.553)	......	......	(8.9)	......	......	......
Average	665	37.0	......	95.747	......	......	......	569.253	......
	(664)	......	(58.798)	......	......	......	......	......	......

TABLE XCIV.—*Summary of solids balances for Series V*—Continued.

Five men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	4,335.5	196.1	425.811	621.911	4.5	9.8	14.3	3,713.589	
No. 2	4,303	156.9		528.177	3.6		12.3	3,774.823	
	(4,884)		(427.153)			(8.7)			
No. 3	3,624	173.2		524.843	4.8		14.5	3,099.157	
	(4,143)		(404.504)			(9.8)			
No. 5	5,351	215.5	513.285	728.785	4.0	9.6	13.6	4,622.215	
No. 6	3,631.5	180.3		505.987	5.0		14.0	3,125.513	
	(4,234.5)		(364.182)			(8.6)			
Total	21,245.0	922.0		2,909.703	4.3		13.7	18,335.297	
	(22,948.0)		(2,134.935)			(9.3)			
Average	590	25.6		80.814				509.186	
	(588.4)		(54.742)						
Preservative period.									
First subperiod:									
No. 1	7,715	389.4	748.818	1,138.218	5.0	9.7	11.8	6,576.782	6.0
No. 2	7,336	326.2	625.285	951.485	4.4	8.5	13.0	6,384.515	6.0
No. 3	6,489		576.352	853.952		8.9	13.2	5,635.048	6.0
	[7,045]	[303.6]			[4.3]				
No. 5	8,997	378.8	772.260	1,151.060	4.2	8.6	12.8	7,845.940	6.0
No. 6	6,262.5	326.9	580.552	907.452	5.2	9.3	14.5	5,355.048	5.0
Total	36,799.5		3,303.267	5,002.167		9.0	13.6	31,797.333	29.0
	[37,355.5]	[1,724.9]			[4.6]				
Average	624		55.988	84.788				539.212	
	[623]	[28.7]							
Second subperiod:									
No. 1	7,630	357.3	706.217	1,063.517	4.7	9.3	13.9	6,566.483	6.0
No. 2	6,726	299.3	588.088	887.388	4.4	8.7	13.2	5,838.612	6.0
No. 3	7,292	313.6	635.016	948.616	4.3	8.7	13.0	6,343.384	6.0
No. 5	7,536	301.0		995.526	4.0		13.2	6,540.474	6.0
	(8,262)		(755.688)			(9.1)			
No. 6	6,137	336.8	571.279	908.079	5.5	9.3	14.8	5,228.921	6.0
Total	35,321	1,608.0		4,803.126	4.6		13.6	30,517.874	30.0
	(36,047)		(3,256.288)			(9.0)			
Average	599	27.3		81.455				517.545	
	(601)		(54.271)						
Subperiods 1 and 2:									
Total	72,120.5			9,805.293			13.6	62,315.207	59.0
	(72,846.5)		(6,559.555)			(9.0)			
	[72,676.5]	[3,332.9]			[4.6]				
Average	611			83.071				527.929	
	(612)		(55.122)						
	[611]	[28.0]							
Third subperiod:									
No. 1	6,955	346.0		1,016.352	5.0		14.6	5,938.648	6.0
	(7,564)		(727.465)			(9.6)			
No. 2	5,547	277.7	537.361	815.061	5.0	9.7	14.7	4,731.939	6.0
No. 3	6,500	296.1		877.816	4.6		13.5	5,622.184	6.0
	(7,076)		(637.770)			(9.0)			
No. 5	6,632	299.7	740.537	1,040.237	4.5	11.2	15.7	5,591.763	5.5
No. 6	5,874	314.8	575.926	890,726	5.4	9.8	15.2	4,983.274	6.0
Total	31,508	1,534.3		4,640.192	4.9		14.7	26,867.808	29.5
	(32,693)		(3,219.059)			(9.8)			
Average	543	26.5		80.003				162,997	
	(545)		(53.651)						
Subperiods 1, 2, and 3:									
Total	103,628.5			14,445.485			13.9	89,183.015	88.5
	(105,539.5)		(9,778.614)			(9.3)			
	[104,184.5]	[4,867.2]			[4.7]				
Average	589			82.077				506.923	
	(590)		(54.629)						
	[589]	[27.5]							

TABLE XCIV.—*Summary of solids balances for Series V*—Continued.

Six men.

Period.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)	9 Preservative administered.
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*	*Grams.*
No. 1	4,335.5	196.1	425.811	621.911	4.5	9.8	14.3	3,713.589	
No. 2	4,303	156.9		528.177	3.6		12.3	3,774.823	
	(4,884)		(427.153)			(8.7)			
No. 3	3,624	173.2		524.843	4.8		14.5	3,099.157	
	(4,143)		(404.504)			(9.8)			
No. 4	3,598		373.266	527.866		10.4	14.7	3,070.134	
	[4,103]	[180.4]			[4.4]				
No. 5	5,351	215.5	513.285	728.785	4.0	9.6	13.6	4,622.215	
No. 6	3,631.5	180.3		505.987	5.0		14.0	3,125.513	
	(4,234.5)		(364.182)			(8.6)			
Total	24,843.0			3,437.569			13.8	21,405.431	
	(26,546.0)		(2,508.201)			(9.4)			
	[25,348.0]	[1,102.4]			[4.3]				
Average	578			79.906				498.094	
	(577)		(54.526)						
	[576]	[25.1]							
Preservative period.									
First subperiod:									
No. 1	7,715	389.4	748.818	1,138.218	5.0	9.7	14.8	6,576.782	6
No. 2	7,336	326.2	625.285	951.485	4.4	8.5	13.0	6,384.515	6
No. 3	6,489		576.352	853.952		8.9	13.2	5,635.048	6
	[7,045]	[303.6]			[4.3]				
No. 4	5,797	278.1	645.925	924.025	4.8	11.1	15.9	4,872.975	6
No. 5	8,997	378.8	772.260	1,151.060	4.2	8.6	12.8	7,845.940	6
No. 6	6,262.5	326.9	580.552	907.452	5.2	9.3	14.5	5,355.048	5
Total	42,596.5		3,949.192	5,926.192		9.3	13.9	36,670.308	35
	[43,152.5]	[2,003.0]			[4.6]				
Average	600		55.622	83.422				516.578	
	[599]	[27.8]							
Second subperiod:									
No. 1	7,630	357.3	706.217	1,063.517	4.7	9.3	13.9	6,566.483	6
No. 2	6,726	299.3	588.088	887.388	4.4	8.7	13.2	5,838.612	6
No. 3	7,292	313.6	635.016	948.616	4.3	8.7	13.0	6,343.384	6
No. 4	6,655	303.8	720.683	1,024.483	4.6	10.8	15.4	5,630.517	6
No. 5	7,536	301.0		995.526	4.0		13.2	6,540.474	6
	(8,262)		(755.688)			(9.1)			
No. 6	6,137	336.8	571.279	908.079	5.5	9.3	14.8	5,228.921	6
Total	41,976	1,911.8		5,827.609	4.6		13.9	36,148.391	36
	(42,702)		(3,976.971)			(9.3)			
Average	591	26.9		82.052				508.948	
	(593)		(55.236)						
Subperiods 1 and 2:									
Total	84,572.5			11,753.801			13.9	72,818.699	71
	(85,298.5)		(7,926.163)			(9.3)			
	[85,128.5]	[3,914.8]			[4.6]				
Average	596			82.787				513.213	
	(596)		(55.428)						
	[595]	[27.4]							

TABLE XCV.—*General summary of solids balances.*

Period and series.	1 In food.	2 In feces.	3 In urine.	4 In feces and urine. (2+3)	5 In feces. (2÷1)	6 In urine. (3÷1)	7 In feces and urine. (4÷1)	8 Balance. (1−4)
Fore period.	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Per ct.*	*Per ct.*	*Per ct.*	*Grams.*
Series I	20,603.9	865.5		2,872.468	4.2		13.9	17,731.432
	(21,246.0)		(2,067.500)			(9.7)		
II *a*	9,418.0	445.8		1,391.341	4.7		14.8	8,026.659
	(12,074.0)		(1,203.243)			(10.0)		
III	22,794.5			3,051.700			13.4	19,742.800
	(23,392.5)		(2,667.200)			(11.4)		
	[23,438.5]	[890.0]			[3.8]			
IV	14,634.0	580.8		1,997.330	4.0		13.6	12,636.670
	(15,272.0)		(1,466.270)			(9.6)		
V	13,310.5	584.8		1,875.539	4.4		14.1	11,434.961
	(13,829.5)		(1,343.600)			(9.7)		
Total	71,312.9			9,797.037			13.7	61,545.863
	(73,740.0)		(7,544.570)			(10.2)		
	[71,986.9]	[2,921.1]			[4.1]			
Average	631.4			86.699				544.701
	(630.3)		(64.484)					
	[631.5]	[25.6]						
Preservative period:								
Series I	45,789.4	2,101.8		6,575.180	4.6		14.4	39,214.220
	(47,043.9)		(4,591.976)			(9.8)		
II *a*	14,703.0	764.2		2,250.567	5.2		15.3	12,452.433
	(16,182.0)		(1,621.332)			(10.0)		
III	30,075.5	1,188.9	3,023.600	4,212.500	4.0	10.1	14.0	25,863.000
IV	34,905.0	1,632.1	3,217.282	4,849.382	4.7	9.2	13.9	30,055.618
V	92,654.0			12,883.092			13.9	79,770.908
	(94,565.0)		(8,701.021)			(9.2)		
	[93,210.0]	[4,382.4]			[4.7]			
Total	203,423.9			28,520.154			14.0	174,903.746
	(206,589.4)		(19,533.879)			(9.5)		
	[203,979.9]	[9,305.2]			[4.6]			
Average	627.9			88.025				539.875
	(627.9)		(59.373)					
	[627.6]	[28.6]						
After period:								
Series I	36,328.5	1,672.4		4,983.999	4.6		13.7	31,344.501
	(36,956.5)		(3,374.269)			(9.1)		
II *a*								
III	18,018.6			2,303.800			12.8	15,714.800
	(19,222.6)		(1,702.500)			(8.9)		
	[18,538.6]	[714.0]			[3.9]			
IV	12,591.0	564.5	1,260.107	1,824.607	4.5	10.0	14.5	10,766.393
V	17,292.0	960.9		2,488.310	5.6		14.4	14,803.690
	(17,930.0)		(1,587.553)			(8.9)		
Total	81,230.1			11,600.716			13.8	72,629.384
	(86,700.1)		(7,921.429)			(9.1)		
	[84,750.1]	[3,911.8]			[4.6]			
Average	614.8			84.677				530.123
	(614.9)		(56.202)					
	[614.1]	[28.3]						

a This series not included in total; all members ill in after period.

SAMPLES OF RECORD AND CALCULATION FORMS.

Daily Chart.

[To be filled out by each member of the Hygienic Table.]

Name and number: F. C. W., No. 2.
Date: April 25, 1903.

Temperature (sublingua). F.°	Hour.	Pulse (beats per minute).	Hour.	Weight stripped (kilos).	Hour.
98.4 98.4	5.20 6	92 87	5.20 6	72.67	5 p. m. ....

Stools.		Hour.	Urine.	Hour.
Weight (grams).	Consistence.[a]		Volume (cc).	
139.0	Firm, light.	11 a. m.	100 100 100 100 100 300	11 a. m. 2 p. m. 5 p. m. 8 p. m. 11 p. m. 7.30 a. m.
Symptoms (normal, pains, colds, feverish, etc.):				

[a] Firm, soft, very soft, semiliquid.

Meal Report, Hygienic Table.

DINNER MENU.

Sunday, *April 26, 1903.*

Name and number of member, F. C. W., No. 2.

Roast chicken / Roast turkey	66	grams.
Creamed potatoes	100	grams.
Fresh peas	75	grams.
Cranberries		grams.
Fresh strawberries	100	grams.
Bread	75	grams.
Butter	13.5	grams.
Sugar	30	grams.
Coffee		cc.
Cocoa		cc.
Tea		cc.
Milk	400	cc.
Water		cc.

N. B.—Each space must be filled out either with a figure or a dash.

Menus for the Hygienic Table.

SUNDAY.

Breakfast.—Apples, oranges, bananas, or grapefruit, oatmeal, eggs, potatoes, Graham gems, bread, butter, sugar, coffee, cocoa, tea, milk, water.

Lunch.—Ox-tail soup, pears, bread, butter, etc.

Dinner.—Roast chicken or turkey, creamed potatoes, peas, cranberries, ice cream, bread, butter, etc.

MONDAY.

Breakfast.—Fruit, shredded wheat biscuit, beefsteak or eggs, potatoes, bread, butter, etc.

Lunch.—Chicken gumbo soup, cherries, bread, butter, etc.

Dinner.—Leg of lamb or roast beef, potatoes, peas or tomatoes; currant jelly, rice pudding, bread, butter, etc.

TUESDAY.

Breakfast.—Fruit, cream of wheat, eggs or pork chops, potatoes, muffins, bread, butter, etc.

Lunch.—Vegetable soup, peaches, bread, butter, etc.

Dinner.—Mutton or veal cutlets, peas, potatoes, grape jelly, pears, cheese, bread, butter, etc.

WEDNESDAY.

Breakfast.—Fruit, grapenuts, pork or beefsteak, potatoes, bread, butter, etc.

Lunch.—Mock turtle soup, pears, bread, butter, etc.

Dinner.—Roast beef, peas, potatoes, currant jelly, corn starch pudding, bread, butter, etc.

THURSDAY.

Breakfast.—Fruit, korn krisp, beefsteak or pork chops, potatoes, Graham gems, bread, butter, etc.

Lunch.—Ox-tail soup, peaches, bread, butter, etc.

Dinner.—Roast chicken or turkey, potatoes, peas, cranberries, ice cream, bread, butter, etc.

FRIDAY.

Breakfast.—Fruit, oat meal, oysters or eggs, potatoes, baked beans, bread, butter, etc.

Lunch.—Pea soup, pears, bread, butter, etc.

Dinner.—Pork, potatoes, Lima beans, tapioca, currant jelly, bread, butter, etc.

SATURDAY.

Breakfast.—Fruit, malta vita, beefsteak or veal cutlets, potatoes, bread, butter, etc.

Lunch.—Consommé, peaches, bread, butter, etc.

Dinner.—Leg of lamb or roast pork, potatoes, peas, apple sauce, bananas or apples, cheese, bread, butter, etc.

Analyses of food for the fore period of Series V, determined per gram of dry substance and calculated to fresh substance.

[Figures in parentheses refer to column numbers.]

Serial number (moist).	Meal, date (1903), and description of food.	Composition of fresh substance.										Composition of air-dry substance.									Serial number (air-dry).
		1 Solids (100 per cent − 3).	2 Combustion (10 by 12).	3 Water (10 by 13).	4 Nitrogen (10 by 14).	5 P_2O_5 (10 by 15).	6 (10 by 16.)	7 (10 by 17.)	8 Fat (10 by 18).	9 Ash (10 by 19).	10 Factor (1 ÷ 11).	11 Solids (100 per cent − 13).	12 Combustion.	13 Water.	14 Nitrogen.	15 P_2O_5.	16	17	18 Fat.	19 Ash.	
		Per ct.	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*		*Per ct.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	
	Breakfast, Apr. 24:																				
4820	Bread	70.52	3.000	29.48	1.340	0.194			0.185		0.7356	95.85	4.070	4.15	1.820	0.264			0.251		
4821	Eggs	30.00	2.150	70.00	2.340	.475			13.210		.3110	96.40		3.60	7.510	1.526					4822
4823	Potatoes	20.20	.826	79.80	.332	.110			.340		.2142	94.29	3.860	5.71	1.550	.512			1.590		
	Korn krisp	92.43	3.940	7.57	1.420	.452			1.070												
	Lunch, April 24:																				
4824	Bread	72.21	3.060	27.79	1.370	.199			.189		.7534	95.85	4.070	4.15	1.820	.264			.251		
	Ox-tail soup	11.97	.619	88.03	.660	.070			1.220												
	Peaches	31.67	2.830	68.33	.045	.038			.000												
	Dinner, Apr. 24:																				
4825	Bread	68.72	2.920	31.28	1.300	.189			.180		.7170	95.85	4.070	4.15	1.820	.264			.251		
4826	Roast pork	52.07	3.960	47.93	3.700	.412			27.540												
4827	Potatoes	20.27	.830	79.73	.333	.110			.342		.2150	94.29	3.860	5.71	1.550	.512			1.590		
4828	Peas	12.08	.573	87.92	.537	.116			.461		.9050	13.35	.633	86.65	.593	.128			.509		
4829	Tapioca	39.63	1.790	60.37	.656	.248			3.070		.4100	96.72	4.370	3.28	1.600	.604			7.490		4833
	Breakfast, Apr. 25:																				
4830	Bread	67.95	2.890	32.05	1.290	.187			.178		.7089	95.85	4.070	4.15	1.820	.264			.251		
4831	Beefsteak	42.52	2.570	57.48	5.050	.580			9.980												
4832	Potatoes	20.65	.845	79.35	.339	.112			.348		.2190	94.29	3.860	5.71	1.550	.512			1.590		
	Grapenuts	94.81	4.040	5.19	1.910	.756			.776												
	Lunch, Apr. 25:																				
5530	Bread	67.68	2.870	32.32	1.280	.186			.177		.7060	95.85	4.070	4.15	1.820	.264			.251		
	Tomato soup	16.03	6.850	83.97	.280	.081			.210												
	Pears	23.16	2.070	76.84	.033	.017			.000												
	Dinner, Apr. 25:																				
5531	Bread	71.08	3.020	28.92	1.350	.196			.186		.7415	95.85	4.070	4.15	1.820	.264			.251		
5532	Roast lamb	39.31	2.490	60.69	4.590	.492			9.900												
5533	Potatoes	21.07	.865	78.93	.347	.115			.356		.2235	94.29	3.860	5.71	1.550	.512			1.590		
5534	Peas	12.19	.578	87.81	.541	.117			.465		.9130	13.35	.633	86.65	.593	.128			.509		
	Peaches	31.67	2.830	68.33	.045	.038			.000												
	Breakfast, Apr. 26:																				
5535	Bread	70.02	2.980	29.98	1.330	.193			.183		.7305	95.85	4.070	4.15	1.820	.264			.251		
5536	Scrambled eggs	29.48	2.110	70.52	2.090	.501			13.330		.3050	96.82		3.18	6.840	1.644					5548
5537	Potatoes	20.85	.814	79.15	.327	.108			.335		.2111	94.29	3.860	5.71	1.550	.512			1.590		
5547	Oatmeal	26.71	1.190	73.29	.715	.238			2.500		.2860	93.32	4.151	6.68	2.500	.835			8.750		

	Lunch, Apr. 26:																				
5538	Bread	68.07	2.890	31.93	1.290	.187			.178		.7101	95.85	1.070	1.15	1.820	.264			.251		
	Bouillon soup	2.76	.110	97.21	.250	.045			.350												
	Pears	23.16	2.070	76.84	.033	.017			.000												
	Dinner, Apr. 26:																				
5539	Bread	67.62	2.870	32.38	1.280	.186			.177		.7051	95.85	4.070	1.15	1.820	.264			.251		
5540	Chicken	43.81	2.780	56.19	4.600	.376			12.520												
5541	Cream potatoes	18.65	.774	81.35	.272	.143			.457		.1960	95.20	3.950	4.80	1.390	.576			2.330		
5542	Fresh peas	17.28	.795	82.72	.626	.204			.461												
5543	Fresh strawberries	7.50	.318	92.50	.405	.056			.000												
	Breakfast, Apr. 27:																				
5544	Bread	72.87	3.090	27.13	1.380	.201			.191		.2602	95.85	4.070	4.15	1.820	.264			.251		
5545	Beefsteak	45.64	3.000	54.36	4.340	.588			15.800												
5546	Potatoes	21.12	.865	78.88	.347	.415			.356		.2240	94.29	3.860	5.71	1.550	.512			1.590		
	Shredded wheat biscuit	91.84	3.910	8.16	4.660	.780			.941												
	Lunch, Apr. 27:																				
5897	Bread	72.98	3.100	27.02	1.390	.201			.194		.7611	95.85	4.070	4.15	1.820	.264			.251		
	Apple sauce	29.28	2.290	70.72	.032	.003			.000												
	Ox-tail soup	11.97	.619	88.03	.660	.070			1.220												
	Dinner, Apr. 27:																				
5898	Bread	70.32	2.990	29.68	1.340	.194			.184		.7336	95.85	4.070	4.15	1.820	.264			.251		
5899	Roast beef	46.54	3.370	53.46	3.920	.352			22.090												
5900	Potatoes, new	20.21	.837	79.79	.295	.122			.494		.2123	95.20	3.950	4.80	1.390	.576			2.330		
5901	Gravy	10.57	.584	89.43	.242	.088			2.420												
5902	Beans, canned	5.60	.263	94.40	.215	.062			.212		.9120	6.14	.288	93.86	.236	.068			.233		
5903	Rice	31.41	1.610	68.59	.590	.196			5.000		.3240	97.06		2.94	1.820	.604					5904
	Breakfast, Apr. 28:																				
5905	Bread	65.38	2.780	34.62	1.240	.180			.171		.6820	95.85	4.070	4.15	1.820	.264			.251		
5906	Eggs, fried	34.05	2.430	65.95	2.260	.517			17.730		.3195	97.41	6.940	2.59	6.150	1.476					5907
5912	Potatoes	20.05	.822	79.95	.330	.109			.339		.2126	94.29	3.860	5.71	1.550	.512			1.590		
5913	Cream of wheat	22.30	.976	77.70	.559	.069			.147		.2450	91.19	3.983	8.81	2.280	.280			.600		
	Lunch, Apr. 28:																				
5916	Bread	69.25	2.940	30.75	1.310	.191			.181		.7224	95.85	4.070	4.15	1.820	.264			.251		
	Peaches	31.67	2.830	68.33	.045	.038			.000												
	Julienne soup	3.64	.182	96.36	.329	.066			.120												
	Dinner, Apr. 28:																				
5917	Bread	69.80	2.960	30.20	1.320	.192			.183		.7282	95.85	4.070	4.15	1.820	.264			.251		
5918	Roast lamb	44.38	2.910	55.62	4.640	.504			14.040												
5919	Potatoes	20.91	.857	79.07	.344	.114			.353		.2218	94.29	3.860	5.71	1.550	.512			1.590		
5920	Peas	12.51	.593	87.49	.556	.120			.477		.9370	13.35	.633	86.65	.593	.128			.509		
5921	Gravy	30.86	2.490	69.14	.421	.192			22.770												
	Pears	23.16	2.070	76.84	.033	.017			.000												
	Breakfast, Apr. 29:																				
5922	Bread	67.25	2.860	32.75	1.280	.185			.176		.7016	95.85	4.070	4.15	1.820	.264			.251		
5923	Pork chops	55.78	4.030	44.22	4.360	.536			27.800												
5924	Potatoes	21.35	.872	78.65	.350	.116			.359		.2264	94.29	3.860	5.71	1.550	.512			1.590		
	Grapenuts	94.81	4.010	5.19	1.910	.756			.776												

Analyses of food for the fore period of Series V, determined per gram of dry substance and calculated to fresh substance—Continued.

Serial number (moist).	Meal, date (1903), and description of food.	Composition of fresh substance.										Composition of air-dry substance.									Serial number (air-dry).
		1 Solids (100 per cent—3).	2 Combustion (10 by 12).	3 Water (10 by 13).	4 Nitrogen (10 by 14).	5 P_2O_5 (10 by 15).	6 (10 by 16).	7 (10 by 17).	8 Fat (10 by 18).	9 Ash (10 by 19).	10 Factor (1 ÷ 11).	11 Solids (100 per cent—13).	12 Combustion.	13 Water.	14 Nitrogen.	15 P_2O_5.	16	17	18 Fat.	19 Ash.	
	Lunch, Apr. 29:	*Per ct.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*		*Per ct.*	*Calories.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*	
5925	Bread	67.38	2.860	32.62	1.280	0.186	......	......	0.176	......	0.7030	95.85	4.070	4.15	1.820	0.264	......	......	0.251	......	......
	Tomato soup	16.03	6.850	83.97	.280	.081	......	......	.210	......	......	......	......	......	......	......	......	......	......	......	......
	Pears	23.16	2.070	76.84	.033	.017	......	......	.000	......	......	......	......	......	......	......	......	......	......	......	......
	Dinner, Apr. 29:																				
5926	Bread	69.43	2.950	30.57	1.320	.191	......	......	.182	......	.7242	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
5927	Roast beef	47.33	3.350	52.67	3.890	.376	......	......	23.700	......	......	......	......	......	......	......	......	......	......	......	......
5928	Potatoes, new	19.57	.815	80.43	.286	.119	......	......	.480	......	.2056	95.20	3.950	4.80	1.390	.576	......	......	2.330	......	......
5929	Peas	12.49	.592	87.51	.555	.120	......	......	.476	......	.9360	13.35	.633	86.65	.593	.128	......	......	.509	......	......
5930	Cornstarch	30.79	1.440	69.21	.520	.219	......	......	2.450	......	.3188	96.59	4.520	3.41	1.630	.688	......	......	7.680	......	5931
	Breakfast, Apr. 30:																				
5932	Bread	69.24	2.940	30.76	1.310	.191	......	......	.181	......	.7224	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
5933	Beefsteak	29.92	1.870	70.08	3.950	.520	......	......	4.650	......	......	......	......	......	......	......	......	......	......	......	......
5934	Potatoes, new	20.00	.830	80.00	.291	.121	......	......	.489	......	.2101	95.20	3.950	4.80	1.390	.576	......	......	2.330	......	......
	Korn krisp	92.43	3.940	7.57	1.420	.452	......	......	1.070	......	......	......	......	......	......	......	......	......	......	......	......
	Lunch, Apr. 30:																				
5935	Bread	68.84	2.920	31.16	1.310	.190	......	......	.180	......	.7182	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
	Ox-tail soup	11.97	.619	88.03	.660	.070	......	......	1.220	......	......	......	......	......	......	......	......	......	......	......	......
	Peaches	31.67	2.830	68.33	.045	.038	......	......	.000	......	......	......	......	......	......	......	......	......	......	......	......
	Dinner, Apr. 30:																				
5936	Bread	72.39	3.070	27.61	1.370	.199	......	......	.190	......	.7552	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
5937	Chicken	44.26	2.760	55.74	4.990	.388	......	......	11.570	......	......	......	......	......	......	......	......	......	......	......	......
5938	Potatoes, new	20.30	.841	79.70	.296	.123	......	......	.496	......	.2132	95.20	3.950	4.80	1.390	.576	......	......	2.330	......	......
5939	Peas	12.98	.615	87.02	.576	.124	......	......	.495	......	.9720	13.35	.633	86.65	.593	.128	......	......	.509	......	......
5940	Fresh strawberries	8.05	.343	91.95	.125	.044	......	......	.000	......	......	......	......	......	......	......	......	......	......	......	......
	Breakfast, May 1:																				
5941	Bread	65.55	2.780	34.45	1.240	.181	......	......	.172	......	.6839	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
5942	Eggs	28.73	2.080	71.27	1.940	.519	......	......	13.550	......	.2951	97.35	......	2.65	6.570	1.760	......	......	40.690	......	5943
5944	Potatoes, new	19.99	.830	80.01	.292	.121	......	......	.489	......	.2100	95.20	3.950	4.80	1.390	.576	......	......	2.330	......	......
5945	Oatmeal	21.62	.963	78.38	.580	.194	......	......	2.030	......	.2320	93.32	4.151	6.68	2.500	.835	......	......	8.750	......	......
	Lunch, May 1:																				
5946	Bread	70.58	3.000	29.42	1.340	.194	......	......	.185	......	.7363	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
	Pears	23.16	2.070	76.84	.033	.017	......	......	.000	......	......	......	......	......	......	......	......	......	......	......	......
	Tomato soup	16.03	.685	83.97	.280	.081	......	......	.210	......	......	......	......	......	......	......	......	......	......	......	......

	Dinner, May 1:																				
5947	Bread	67.29	2.860	32.71	1.280	.185	......	......	.176	......	.7020	95.85	4.070	4.15	1.820	.264	......	......	.251	......	......
5948	Roast pork	55.88	3.770	44.62	4.440	.148	......	......	26.890	......	......	......	......	......	......	......	......	......	......	......	......
5949	Potatoes, new	33.60	.980	76.40	.345	.143	......	......	.578	......	.2479	95.20	3.950	4.80	1.390	.576	......	......	2.330	......	......
5950	Fresh beans	6.51	.300	93.49	.223	.080	......	......	.212	......	......	......	......	......	......	......	......	......	......	......	......
5951	Gravy	19.39	1.370	80.61	.360	.112	......	......	10.490	......	......	......	......	......	......	......	......	......	......	......	......
5952	Tapioca	41.80	2.200	58.20	.507	.221	......	......	8.400	......	.4446	94.04	......	5.96	1.140	.496	......	......	18.870	......	5953
5954	Bread, composite	......	......	......	......	......	......	......	......	......	......	95.85	4.070	4.15	1.820	.261	......	......	.251	......	......
5955	Potatoes (old), composite	......	......	......	......	......	......	......	......	......	......	94.29	3.860	5.71	1.550	.512	......	......	1.590	......	......
5955a	Potatoes (new), composite	......	......	......	......	......	......	......	......	......	......	95.20	3.950	4.80	1.390	.576	......	......	2.330	......	......

Amount and composition of food consumed daily by F. C. W., No. 2, in the fore period of Series V.

APRIL 24, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
		Calories per gm.	*Total cals.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*
Breakfast:	*Grams.*										
Cereal, korn krisp	40	3.940	158	7.57	3	1.420	0.57	0.452	0.18	1.070	0.43
Meat, eggs	83	2.150	178	70.00	58	2.340	1.94	.475	.39	13.210	10.96
Vegetables, potatoes	100	.826	83	79.80	80	.332	.33	.110	.11	.340	.34
Bread	60	3.000	180	29.48	18	1.340	.80	.194	.12	.185	.11
Drink, milk	413	.778	321	86.69	358	.572	2.36	.225	.93	3.950	16.31
Miscellaneous—											
Butter	19	8.040	153	12.67	2	.070	.01	.000	......	86.490	16.43
Sugar	40	4.000	160	......	......	......	......	......	......	......	......
Lunch:											
Bread	75	3.060	230	27.79	20	1.370	1.03	.199	.15	.189	.14
Drink, milk	413	.778	321	86.69	358	.572	2.36	.225	.93	3.950	16.31
Dessert, peaches	150	2.830	424	68.33	102	.045	.07	.038	.06	.000	.00
Miscellaneous—											
Butter	11.5	8.040	92	12.67	1	.070	.01	.000	......	86.490	9.95
Sugar	40	4.000	160	......	......	......	......	......	......	......	......
Dinner:											
Meat, pork	66	3.960	261	47.93	32	3.700	2.44	.412	.27	27.540	18.18
Vegetables—											
Potatoes	100	.830	83	79.73	80	.333	.33	.110	.11	.342	.34
Peas	50	.573	29	87.92	44	.537	.27	.116	.06	.461	.23
Bread	75	2.920	219	31.28	23	1.300	.98	.189	.14	.180	.14
Drink—											
Milk	413	.778	321	86.69	358	.572	2.36	.225	.93	3.950	16.31
Water	600	......	......	......	600	......	......	......	......	......	......
Dessert, tapioca	70	1.790	125	60.37	42	.656	.46	.248	.17	3.070	2.15
Miscellaneous—											
Butter	19	8.040	153	12.67	2	.070	.01	.000	......	86.490	16.43
Sugar	20	4.000	80	......	......	......	......	......	......	......	......
Total	2,857.5	......	3,731	......	2,181	......	16.33	......	4.55	......	124.76

APRIL 25, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
	Grams.	Calories per gm.	Total cals.	Per cent.	Gms.	Per cent.	Gms.	Per cent.	Gms.	Per cent.	Gms.
Breakfast:											
Cereal, grapenuts	40	4.040	162	5.19	2	1.910	0.76	0.756	0.30	0.776	0.31
Meat, beef	80	2.570	206	57.48	46	5.050	4.04	.580	.46	9.980	7.98
Vegetables, potatoes	100	.845	84	79.35	79	.339	.34	.112	.11	.348	.35
Bread	50	2.890	144	32.05	16	1.290	.64	.187	.09	.178	.09
Drink, milk	413	.778	321	86.69	358	.572	2.36	.225	.93	3.950	16.31
Miscellaneous—											
Butter	17	8.040	137	12.67	2	.070	.01	.000	......	86.490	14.70
Sugar	20	4.000	80	......	......	......	......	......	......	......	......
Lunch:											
Bread	75	2.870	215	32.32	24	1.280	.96	.186	.14	.177	.13
Drink, milk	413	.803	332	86.66	358	.552	2.28	.225	.93	4.300	17.76
Dessert, pears	150	2.070	310	76.84	115	.033	.05	.017	.03	.000	......
Miscellaneous—											
Butter	14	8.040	113	12.67	2	.070	.01	.000	......	86.490	12.11
Sugar	30	4.000	120	......	......	......	......	......	......	......	......
Dinner:											
Meat, mutton	66	2.490	164	60.69	40	4.590	3.03	.492	.22	9.900	6.53
Vegetables—											
Potatoes	100	.865	86	78.93	79	.347	.35	.115	.12	.356	.36
Peas	50	.578	29	87.81	44	.541	.27	.117	.06	.467	.23
Bread	75	3.020	226	28.92	22	1.350	1.01	.196	.15	.186	.14
Drink, milk	413	.803	332	86.66	358	.552	2.28	.225	.93	4.300	17.76
Dessert, peaches	100	2.830	283	68.33	68	.045	.04	.038	.04	.000	......
Miscellaneous—											
Butter	19	8.040	153	12.67	2	.070	.01	.000	......	86.490	16.43
Sugar	20	4.000	80	......	......	......	......	......	......	......	......
Total	2,245	......	3,577	......	1,615	......	18.44	......	4.51	......	111.19

Amount and composition of food consumed daily by F. C. W., No. 2, in the fore period of Series V—Continued.

APRIL 26, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
	Grams.	*Calories per gm.*	*Total cals.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*
Breakfast:											
Cereal, oatmeal	150	1.190	178	73.29	110	0.715	1.07	0.238	0.36	2.500	3.75
Meat, eggs	80	2.110	169	70.52	56	2.090	1.67	.501	.40	13.330	10.66
Vegetables, potatoes	100	.814	81	79.15	79	.327	.33	.108	.11	.335	.34
Bread	50	2.890	144	31.93	16	1.290	.64	.187	.09	1.830	.09
Drink, milk	413	.803	332	86.66	358	.552	2.28	.225	.93	4.300	17.76
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	40	4.000	160	......	......	......	......	......	......	......	......
Lunch:											
Bread	75	2.890	217	31.93	24	1.290	.97	.187	.14	1.780	.13
Drink, milk	413	.803	332	86.66	358	.552	2.28	.225	.93	4.300	17.76
Dessert, pears	150	2.070	310	76.84	115	.033	.05	.017	.03	.000	.00
Miscellaneous—											
Butter	14	7.720	108	15.70	2	.113	.02	.000	......	83.000	11.62
Sugar	40	4.000	160	......	......	......	......	......	......	......	......
Dinner:											
Meat, chicken	66	2.780	183	56.19	37	4.600	3.04	.376	.25	12.520	8.26
Vegetables—											
Potatoes	100	.771	77	81.35	81	.272	.27	.113	.11	.457	.46
Peas, fresh	75	.795	60	82.72	62	.626	.47	.204	.15	.461	.35
Bread	75	2.870	215	32.38	24	1.280	.96	.186	.14	.177	.13
Drink—											
Milk	413	.803	332	86.66	358	.552	2.28	.225	.93	4.300	17.76
Water	800	......	......	......	800	......	......	......	......	......	......
Dessert, strawberries	100	.318	32	92.50	92	.105	.10	.056	.06	.000	......
Miscellaneous—											
Butter	17.5	7.720	135	15.70	3	.113	.02	.000	......	83.000	14.52
Sugar	30	4.000	120	......	......	......	......	......	......	......	......
Total	3,220.5	......	3,492	......	2,568	......	16.47	......	4.63	......	119.36

APRIL 27, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
	Grams.	*Calories per gm.*	*Total cals.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*
Breakfast:											
Cereal, shredded wheat	40	3.910	156	8.16	3	1.660	0.66	0.780	0.31	0.941	0.38
Meat, beef	72	3.000	216	54.36	39	4.340	3.12	.588	.42	15.800	11.38
Vegetables, potatoes	100	.865	86	78.88	79	.347	.35	.115	.12	.356	.36
Bread	50	3.090	154	27.13	14	1.380	.69	.201	.10	.191	.10
Drink, milk	413	.803	332	86.66	358	.552	2.28	.225	.93	4.30	17.76
Miscellaneous—											
Butter	11.5	7.720	89	15.70	2	.113	.01	.000	......	83.000	9.51
Sugar	60	4.000	240	......	......	......	......	......	......	......	......
Lunch:											
Bread	75	3.100	232	27.02	20	1.390	1.04	.201	.15	.191	.14
Drink, milk	413	.707	292	88.17	364	.530	2.19	.225	.93	3.350	13.84
Miscellaneous, sugar	50	4.000	200	......	......	......	......	......	......	......	......
Dinner:											
Soup, gravy	45	.581	26	89.13	10	.242	.11	.088	.04	2.420	1.09
Meat, beef	66	3.370	222	53.46	35	3.920	2.59	.352	.23	22.090	14.58
Vegetables, potatoes	100	.837	84	79.79	80	.295	.30	.122	.12	.494	.49
Bread	75	2.990	224	29.68	22	1.340	1.00	.191	.15	.184	.14
Drink—											
Milk	413	.707	292	88.17	364	.530	2.19	.225	.93	3.350	13.84
Water	250	......	......	......	250	......	......	......	......	......	......
Dessert, rice	100	1.610	161	68.59	69	.590	.59	.196	.20	5.000	5.00
Miscellaneous—											
Butter	19	7.720	147	15.70	2	.113	.02	.000	......	83.000	15.77
Sugar	40	4.000	160	......	......	......	......	......	......	......	......
Total	2,392.5	......	3,513	......	1,717	......	17.11	......	4.63	......	104.41

Amount and composition of food consumed daily by F. C. W., No. 2, in the fore period of Series V—Continued.

APRIL 28, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
	Grams.	*Calories per gm.*	*Total cals.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*
Breakfast:											
Cereal, cream of wheat	150	0.976	146	77.70	117	0.559	0.84	0.069	0.10	0.147	0.22
Meat, eggs	85	2.430	207	65.95	56	2.260	1.92	.517	.44	17.730	15.07
Vegetables, potatoes	100	.822	82	79.95	80	.330	.33	.109	.11	.339	.34
Bread	50	2.780	139	34.62	17	1.240	.62	.180	.09	.171	.09
Drink, milk	309	.707	218	88.17	272	.530	1.64	.225	.70	3.350	10.35
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	30	4.000	120	......	......	......	......	......	......	......	......
Lunch:											
Bread	70	2.940	206	30.75	22	1.310	.92	.191	.13	.181	.13
Drink, milk	413	.832	344	86.11	356	.579	2.39	.225	.93	4.500	18.58
Miscellaneous, sugar	50	4.000	200	......	......	......	......	......	......	......	......
Dinner:											
Soup, gravy	45	2.490	112	69.14	31	.421	.19	.192	.09	22.770	10.25
Meat, mutton	66	2.910	192	55.62	37	4.640	3.06	.504	.33	14.040	9.27
Vegetables—											
Potatoes	100	.857	86	79.07	79	.344	.34	.114	.11	.353	.35
Peas	50	.593	30	87.49	44	.556	.28	.120	.06	.477	.24
Bread	75	2.960	222	30.20	23	1.320	.99	.192	.14	.183	.14
Drink—											
Milk	413	.832	344	86.11	356	.579	2.39	.225	.93	4.500	18.58
Water	500	....	......	......	......	......	......	......	......	......	......
Dessert, pears	100	2.070	207	76.84	77	.033	.03	.017	.02	.000	......
Miscellaneous, butter	19	7.720	147	15.70	3	.113	.03	.000	......	83.000	15.77
Total	2,654	....	3,149	......	2,073	......	15.99	......	4.18	......	115.15

APRIL 29, 1903.

Breakfast:											
Cereal, grapenuts	40	4.040	162	5.19	2	1.910	0.76	0.756	0.30	0.776	0.31
Meat, pork	66	4.030	266	44.22	29	4.360	2.88	.536	.35	27.800	18.35
Vegetables, potatoes	100	.872	87	78.65	79	.350	.35	.116	.12	.359	.36
Bread	50	2.860	143	32.75	16	1.280	.64	.185	.09	.176	.09
Drink, milk	413	.832	344	86.11	356	.579	2.39	.225	.93	4.500	18.58
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	20	4.000	80	......	......	......	......	......	......	......	......
Lunch:											
Bread	66	2.860	189	32.62	22	1.280	.84	.186	.12	.176	.12
Drink, milk	413	.730	301	87.47	361	.554	2.29	.225	.93	3.500	14.46
Miscellaneous, sugar	40	4.000	160	......	......	......	......	......	......	......	......
Dinner:											
Meat, beef	80	3.350	268	52.67	42	3.890	3.11	.376	.30	23.700	18.96
Vegetables—											
Potatoes	100	.815	82	80.43	80	.286	.29	.119	.12	.480	.48
Peas	50	.592	30	87.51	44	.555	.28	.120	.06	.476	.24
Bread	40	2.950	118	30.57	12	1.320	.53	.191	.08	.182	.07
Drink—											
Milk	413	.730	301	87.47	361	.554	2.29	.225	.93	3.500	14.46
Water	800	....	......	......	800	......	......	......	......	......	......
Dessert, cornstarch	100	1.440	144	69.21	69	.520	.52	.219	.22	2.450	2.45
Miscellaneous, butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Total	2,829	....	2,969	......	2,279	......	17.21	......	4.55	......	120.47

Amount and composition of food consumed daily by F. C. W., No. 2, in the fore period of Series V—Continued.

APRIL 30, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
	Grams.	*Calories per gm.*	*Total cals.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*
Breakfast:											
Cereal, korn krisp	40	3.940	158	7.57	3	1.420	0.57	0.452	0.18	1.070	0.43
Meat, beef	72	1.870	135	70.08	50	3.950	2.84	.520	.37	4.650	3.35
Vegetables, potatoes	100	.830	83	80.00	80	.291	.29	.121	.12	.489	.49
Bread	33	2.940	97	30.76	10	1.310	.43	.191	.06	.181	.06
Drink, milk	413	.730	301	87.47	361	.554	2.29	.225	.93	3.500	14.46
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	40	4.000	160	......	......	......	......	......	......	......	......
Lunch:											
Bread	40	2.920	117	31.16	12	1.310	.52	.190	.08	.180	.07
Drink, milk	413	.710	293	87.71	362	.512	2.11	.225	.93	3.450	14.25
Dessert, peaches	150	2.830	424	68.33	102	.045	.07	.038	.06	.000	......
Miscellaneous, sugar	30	4.000	120	......	......	......	......	......	......	......	......
Dinner:											
Meat, chicken	66	2.760	182	55.74	37	4.990	3.29	.388	.26	11.570	7.64
Vegetables—											
Potatoes	100	.841	84	79.70	80	.296	.30	.123	.12	.496	.50
Peas	50	.615	31	87.02	44	.576	.29	.124	.06	.495	.25
Bread	45	3.070	138	27.61	12	1.370	.62	.199	.09	.190	.09
Drink—											
Milk	413	.710	293	87.71	362	.512	2.11	.225	.93	3.450	14.25
Water	1,050	......	......	......	1,050	......	......	......	......	......	......
Dessert, strawberries	100	.343	34	91.95	92	.125	.12	.044	.04	.000	......
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	30	4.000	120	......	......	......	......	......	......	......	......
Total	3,223	......	3,064	......	2,663	......	15.89	......	4.23	......	87.38

MAY 1, 1903.

Meal and kind of food.	Weight.	Combustion.		Water.		Nitrogen.		Phosphoric acid.		Fat.	
	Grams.	*Calories per gm.*	*Total cals.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*	*Per cent.*	*Gms.*
Breakfast:											
Cereal, oatmeal	150	0.963	144	78.38	118	0.580	0.87	0.194	0.29	2.030	3.01
Meat, eggs	80	2.080	166	71.27	57	1.940	1.55	.519	.42	13.550	10.84
Vegetables, potatoes	100	.830	83	80.01	80	.292	.29	.121	.12	.489	.49
Bread	25	2.780	70	34.45	9	1.240	.31	.181	.05	.172	.04
Drink, milk	413	.710	293	87.71	362	.512	2.11	.225	.93	3.450	14.25
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	30	4.000	120	......	......	......	......	......	......	......	......
Lunch:											
Bread	43	3.000	129	29.42	13	1.340	.58	.191	.08	.185	.08
Drink, milk	413	.741	306	87.26	360	.534	2.21	.225	.93	3.700	15.28
Dessert, pears	150	2.070	310	76.84	115	.033	.05	.017	.03	......	......
Miscellaneous, sugar	40	4.000	160	......	......	......	......	......	......	......	......
Dinner:											
Soup, gravy	45	1.370	62	80.61	36	.360	1.62	.112	.05	10.490	4.72
Meat, pork	66	3.770	249	41.62	29	4.440	2.93	.418	.30	26.890	17.75
Vegetables, potatoes	100	.980	98	76.40	76	.345	.34	.143	.14	.578	.58
Bread	75	2.860	214	32.71	25	1.280	.96	.185	.14	.176	.13
Drink—											
Milk	413	.741	306	87.26	360	.534	2.21	.225	.93	3.700	15.28
Water	1,100	......	......	......	1,100	......	......	......	......	......	......
Dessert, tapioca	70	2.200	154	58.20	41	.507	.35	.221	.15	8.400	5.88
Miscellaneous—											
Butter	19	7.720	147	15.70	3	.113	.02	.000	......	83.000	15.77
Sugar	20	4.000	80	......	......	......	......	......	......	......	......
Total	2,271	......	3,238	......	2,787	......	16.42	......	4.56	......	119.90

Analyses of feces for the fore period of Series V, determined per gram of dry substance and calculated to the fresh substance.

[Figures in parentheses refer to column numbers.]

Date and serial number (moist).	Member.	Composition of fresh substance.										Composition of air-dry substance.									Serial number (air-dry).
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
		Solids (100 per cent — 3).	(10 by 12).	Water (10 by 13).	Nitrogen (10 by 14).	P_2O_5 (10 by 15).	(10 by 16).	(10 by 17.)	Fat (10 by 18).	Ash (10 by 19).	Factor (1 ÷ 11).	Solids (100 per cent — 13).		Water.	Nitrogen.	P_2O_5.			Fat.	Ash.	
Apr. 24:		*P. ct.*	*Cals.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*		*P. ct.*	*Cals.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	
5183	Number 1 a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5549
5184	Number 2	20.78	...	79.22	1.05	1.22	...	...	1.86	4.41	0.217	95.67	...	4.33	4.83	5.64	...	...	8.55	20.32	5550
5185	Number 3 a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5551
5186	Number 4	15.51	...	84.49	.963	.737	...	...	2.44	2.93	.161	96.26	...	3.74	5.98	4.58	...	...	15.16	18.20	5552
5187	Number 5	19.36	...	80.64	1.16	1.10	...	...	2.21	3.65	.201	96.19	...	3.81	5.78	5.46	...	...	10.98	18.18	5553
5188	Number 6 a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5554
Apr. 25:																					
5189	Number 1	19.29	...	80.71	.930	1.52	...	...	2.59	4.47	.203	95.08	...	4.92	4.58	7.48	...	...	12.77	22.02	5555
5190	Number 2	21.23	...	78.77	1.10	1.29	...	...	1.92	4.57	.225	94.57	...	5.43	4.88	5.74	...	...	8.55	20.32	5556
5191	Number 3	19.00	...	81.00	1.10	.869	...	...	2.76	3.04	.202	94.14	...	5.86	5.45	4.30	...	...	13.67	15.05	5557
5192	Number 4 b	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5558
5193	Number 5	29.68	...	70.32	1.66	1.73	...	...	3.49	5.78	.318	93.28	...	6.72	5.22	5.44	...	...	10.98	18.18	5559
5194	Number 6	16.59	...	83.41	.915	.673	...	...	2.14	2.27	.177	93.87	...	6.13	5.17	3.80	...	...	12.10	12.80	5560
Apr. 26:																					
5195	Number 1	19.36	...	80.64	.881	1.55	...	...	2.61	4.49	.204	95.01	...	4.99	4.32	7.60	...	...	12.77	22.02	5561
5196	Number 2	20.34	...	79.66	.825	1.40	...	...	1.85	4.39	.216	94.27	...	5.73	3.82	6.50	...	...	8.55	20.32	5562
5197	Number 3	19.18	...	80.82	1.19	.906	...	...	2.79	3.07	.204	93.82	...	6.18	5.81	4.44	...	...	13.67	15.05	5563
5198	Number 4	27.83	...	72.17	1.71	1.50	...	...	4.47	5.37	.295	94.32	...	5.68	5.78	5.10	...	...	15.16	18.20	5564
5199	Number 5	26.30	...	73.70	1.33	1.56	...	...	3.05	5.05	.278	94.60	...	5.40	4.77	5.60	...	...	10.98	18.18	5565
5200	Number 6	18.69	...	81.31	.949	.896	...	...	2.41	2.55	.199	93.85	...	6.15	4.77	4.50	...	...	12.10	12.80	5566
Apr. 27:																					
5201	Number 1	22.42	...	77.58	1.06	1.84	...	...	3.04	5.24	.238	94.25	...	5.75	4.44	7.72	...	...	12.77	22.02	5567
5202	Number 2 b	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5568
5203	Number 3	28.03	...	71.97	1.63	1.54	...	...	4.13	4.55	.302	92.74	...	7.26	5.39	5.10	...	...	13.67	15.05	5569
5204	Number 4	28.41	...	71.59	1.76	1.53	...	...	4.62	5.55	.305	93.28	...	6.72	5.78	5.00	...	...	15.16	18.20	5570
5205	Number 5	33.39	...	66.61	1.70	1.98	...	...	4.06	6.73	.370	90.13	...	9.87	4.60	5.36	...	...	10.98	18.18	5571
5206	Number 6	22.45	...	77.55	1.30	.882	...	...	2.92	3.09	.241	93.12	...	6.88	5.39	3.66	...	...	12.10	12.80	5572
Apr. 28:																					
5207	Number 1	21.03	...	78.97	.917	1.84	...	...	2.83	4.89	.222	94.62	...	5.38	4.13	8.28	...	...	12.77	22.02	5573
5208	Number 2 a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5574
5209	Number 3	23.44	...	76.56	1.37	1.39	...	...	3.38	3.72	.247	94.86	...	5.14	5.53	5.64	...	...	13.67	15.05	5575
5210	Number 4	23.78	...	76.22	1.51	1.26	...	...	3.82	4.59	.252	94.38	...	5.62	5.98	5.00	...	...	15.16	18.20	5576
5211	Number 5 b	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5577
5212	Number 6	16.71	...	83.29	.959	.766	...	...	2.17	2.29	.179	93.38	...	6.62	5.36	4.28	...	...	12.10	12.80	5578

Apr. 29.																					
5213..	Number 1 ..	20.85	....	79.15	.841	1.93	....	....	2.78	4.80	.218	95.69	....	4.31	3.87	8.84	......	......	12.77	22.02	5579
5214 .	Number 2...	14.95	....	85.05	.692	1.01	....	....	1.35	3.21	.158	94.80	....	5.20	4.38	6.38	......	......	8.55	20.32	5580
5215..	Number 3 ..	23.79	....	76.21	1.37	1.37	....	....	3.47	3.82	.251	93.70	....	6.30	5.39	5.40	......	......	13.67	15.05	5581
5216..	Number 4...	23.38	....	76.62	1.41	.992	....	....	3.76	4.51	.248	94.23	....	5.77	5.67	4.00	......	......	15.46	18.20	5582
5217..	Number 5...	28.76	....	71.24	1.42	1.58	....	....	3.32	5.49	.302	95.31	....	4.69	4.69	5.24	......	......	10.98	18.18	5583
5218..	Number 6...	11.32	....	88.68	.590	.523	....	....	4.46	4.55	.124	93.19	....	6.81	4.88	4.32	......	......	12.10	12.80	5584
Apr. 30.																					
5219	Number 1...	25.58	....	74.42	1.15	2.29	....	....	3.44	5.92	.269	95.15	....	4.85	4.29	8.52	......	......	12.77	22.02	5585
5220..	Number 2...	23.48	....	76.52	.986	1.83	....	....	2.11	5.02	.217	95.13	....	4.87	3.99	7.40	......	......	8.55	20.32	5586
5221 .	Number 3...	17.35	....	82.65	1.01	.773	....	....	2.52	2.77	.184	94.16	....	5.84	5.47	4.20	......	......	13.67	15.05	5587
5222..	Number 4...	27.10	....	72.90	1.64	1.28	....	....	4.35	5.22	.287	94.41	....	5.59	5.70	4.46	......	......	15.46	18.20	5588
5223..	Number 5...	31.68	....	68.32	1.31	1.93	....	....	3.63	6.02	.331	95.77	....	4.23	3.96	5.84	......	......	10.98	18.18	5589
5224..	Number 6...	15.14	....	84.86	.760	.599	....	....	1.95	2.06	.161	94.16	....	5.84	4.72	3.72	......	......	12.40	12.80	5590
May 1.																					
5225	Number 1...	18.08	....	81.92	.770	1.63	....	....	2.45	4.23	.192	94.12	....	5.88	4.01	8.50	......	......	12.77	22.02	5591
5226..	Number 2...	25.32	....	74.68	1.14	2.01	....	....	2.30	5.47	.269	94.02	....	5.98	4.24	7.46	......	......	8.55	20.32	5592
5227	Number 3...	20.06	....	79.94	1.20	1.41	....	....	2.91	3.21	.213	94.34	....	5.66	5.64	5.20	......	......	13.67	15.05	5593
5228 .	Number 4...	21.28	....	78.72	1.12	1.11	....	....	3.44	4.13	.227	93.71	....	6.29	6.26	4.88	......	......	15.46	18.20	5594
5229..	Number 5...	29.41	....	70.59	1.30	2.06	....	....	3.43	5.67	.312	94.40	....	5.60	4.18	6.60	......	......	10.98	18.18	5595
5230 .	Number 6 b .	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......	......	....	....	5596

a Lost.

b No movement.

Amount and composition of feces for the fore period of Series V, for F. C. W., No. 2.

Date.	Serial number.	Weight.	Total calories.	Water.		Nitrogen.		Phosphoric acid.		Fat.		Ash.	
		Gms.		*P. ct.*	*Gms.*	*P. ct.*	*Gms.*	*P. ct.*	*Gms.*	*P. ct.*	*Gms.*	*P. ct.*	*Gms.*
Apr. 24	5184	143.4	123.37	79.22	113.6	1.05	1.510	1.22	1.75	1.86	2.67	4.41	6.32
25	5190	139.0	122.18	78.77	109.5	1.10	1.530	1.29	1.79	1.92	2.67	4.57	6.35
26	5196	165.7	136.31	79.66	132.0	.825	1.370	1.40	2.32	1.85	3.07	4.39	7.27
27	5202*a*	....	....	....	....	....	....	....	....	....	....	....	....
28	5208*b*	....	....	....	....	....	....	....	....	....	....	....	....
29	5214	111.7	68.35	85.05	95.0	.692	.773	1.01	1.13	1.35	1.51	3.21	3.59
30	5220	92.0	87.64	76.52	70.4	.986	.907	1.83	1.68	2.11	1.94	5.02	4.62
May 1	5226	101.1	104.47	74.68	75.5	1.14	1.150	2.01	2.03	2.30	2.33	5.47	5.53

a No movement. *b* Lost.

Amount and composition of urine for the fore period of Series V, for F. C. W., No. 2.

Serial number.	Date.	Volume.	Specific gravity.*a*	Solids per liter.	Total solids.	Nitrogen per liter.	Total nitrogen.	P_2O_5 per liter.	Total P_2O_5.	Sodium chlorid per liter.	Total sodium chlorid.
	1903.	*Liters.*		*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*	*Grams.*
4835...	Apr. 24	0.840	1.0280	68.600	57.624	16.8	14.11	Not run.	....	Not run.	....
4841...	25	.880	1.0244	59.784	52.610	17.7	15.58	3.308	2.91	....do....	....
4847...	26	.890	1.0234	57.325	51.022	15.8	14.06	3.252	2.89	....do....	....
4853...	27	.780	1.0276	67.616	52.741	19.4	15.13	3.870	3.02	....do....	....
4859...	28	.800	1.0285	69.845	55.876	18.8	15.04	3.800	3.04	8.650	6.920
4865...	29	.680	1.0327	80.119	54.481	22.1	15.03	4.208	2.86	9.707	6.601
4871...	30	.605	1.0329	80.611	08.770	23.8	14.40	4.286	2.59	6.521	3.945
4877...	May 1	.745	1.0296	72.522	54.029	19.3	14.38	3.672	2.74	4.681	3.487

a Urine at 25° C. compared with water at 25° C.

ESTIMATE OF WORK INVOLVED.

To give an idea of the volume of work involved in this investigation the following approximate estimate is given of the number of samples analyzed and the number of record and calculation forms used, though this but inadequately represents the detail of the work in all its phases, when it is remembered that upon each sample determinations were made for water, nitrogen, phosphoric acid, and calories.

Number of samples analyzed, etc.

[Number of days of observation, 196.]

Food samples	2,550
Urine samples	1,175
Feces samples	1,175
Microscopical examinations:	
Urine	125
Blood	60
Total	5,085

Number of record sheets, balances, etc.

Menu sheets	3,618
Daily charts (pulse, temperature, etc.)	1,206
Food sheets:	
Amount and composition	1,206
Calculation to fresh substance	75
Feces sheets:	
Amount and composition	35
Calculation to fresh substance	65
Urine sheets	20
Balance tables	200
Total	6,425

REFERENCES TO HEADINGS, BY SERIES.

Headings.	Series I.	Series II.	Series III.	Series IV.	Series V.
	Pages.	*Pages.*	*Pages.*	*Pages.*	*Pages.*
Body weights	87–89	89–91	91	91–92	92–93
Calories:					
Balance		233–234	234	234–235	235
Percentage eliminated		236	236	236–237	237
Fat:					
Balance		229	229–230	230	230–231
Percentage eliminated		231	232	232	232
Feces, composition of	128–132	132–135	135–140	141–146	146–151
Medical notes, daily	52–57	57–62	62–69	69–71	74–81
Nitrogen:					
Balance	212–213	213	214	214–215	215
Percentage eliminated	216–217	217	217–218	218	218–219
Phosphoric acid:					
Balance	220–221	221–222	222	222–224	224–225
Percentage eliminated	225–226	226	226–227	227	227–228
Solids balance	238–239	239–240	240–241	241–242	242–243
Urine:					
Microscopical examinations		199–201	201–203	203–204	204–207
Nitrogen and phosphoric acid eliminated	154–155	156–157	157	158	158
Reaction		159–160	160–161	161–162	162
Volume, specific gravity, and total solids	167–169	169–171	171–174	174–177	177–178

LIST OF TABLES.

PHOSPHORIC ACID.

FAT.

CALORIES.

SOLIDS.